

UNCLASSIFIED

AD **406 005**

DEFENSE DOCUMENTATION CENTER

FOR  
SCIENTIFIC AND TECHNICAL INFORMATION

CAMERON STATION, ALEXANDRIA, VIRGINIA



UNCLASSIFIED

NOTICE: When government or other drawings, specifications or other data are used for any purpose other than in connection with a definitely related government procurement operation, the U. S. Government thereby incurs no responsibility, nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use or sell any patented invention that may in any way be related thereto.

**Best  
Available  
Copy**

406 005

406 005

JPRS: 17,129

OTS

15 January 1963

AD No.

FILE COPY

BIOGRAPHIES OF SOVIET SCIENTISTS

Scans - 1

U. S. DEPARTMENT OF COMMERCE  
OFFICE OF TECHNICAL SERVICES  
JOINT PUBLICATIONS RESEARCH SERVICE  
Building T-30  
Ohio Dr. and Independence Ave., S.W.  
Washington 25, D. C.

Price: \$10.10

DDC

REF ID: A65170

## FOREGWORD

This publication was prepared under contract for the Joint Publications Research Service, an organization established to service the translation and foreign-language research needs of the various federal government departments.

The contents of this material in no way represent the policies, views, or attitudes of the U. S. Government, or of the parties to any distribution arrangements.

## PROCUREMENT OF JPRS REPORTS

All JPRS reports are listed in Monthly Catalog of U. S. Government Publications, available for \$4.50 (\$6.00 foreign) per year (including an annual index) from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D.C.

Scientific and technical reports may be obtained from: Sales and Distribution Section, Office of Technical Services, Washington 25, D. C. These reports and their prices are listed in the Office of Technical Services semimonthly publication, Technical Translations, available at \$12.00 per year from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

Photocopies of any JPRS report are available (price upon request) from: Photoduplication Service, Library of Congress, Washington 25, D. C.

## BIOGRAPHIES OF SOVIET SCIENTISTS

[Following are translations of selected articles from Russian-language periodicals. Bibliographical information is given with the individual articles.]

## TABLE OF CONTENTS

Ufa Mendybayevich Akhmedsafin . . . . .	1
Arto Bogdanovich Aleksanyan . . . . .	4
Mikhail Gerasimovich Anan'yev . . . . .	8
Sergey Viktorovich Antikov . . . . .	10
	12
Aleksandr Yermakringel'dovich Arbusov . . . . .	16
Ignat Ignat'yevich Bulykhae . . . . .	20
Yevgeniy Ivanovic Chayka . . . . .	22
Iakob Vissarionovich Dubchenedze . . . . .	24
Iakov Pavlovich Frumkin . . . . .	26
Semion Fedorovich Gal'tis . . . . .	28
Boris Nikolayevich Kalmykov . . . . .	30
August Martynovich Kriklerenets . . . . .	32
Vladimir Ivanovich Korstan'cov . . . . .	33
Leonid Fadurovich Larionov . . . . .	37
Andrey Vladimirovich Lebedevskiy . . . . .	39

Aleksandr Fedorovich Lepukaln . . . . .	44
Mikolas Martsinkyavichyus . . . . .	46
Vladislav Melyanovskiy . . . . .	48
Yakub Karimabayevich Muminov . . . . .	50
Igor' Andreyevich Piontkovskiy . . . . .	52
Fedor Yokovlevich Roze . . . . .	54
Ol'da Isaakovna Shershanskaya . . . . .	56
Ovsey Abramovich Sheynberg . . . . .	58
Leonid Nikolayevich Sretenskiy . . . . .	59
Il'ye Davidovich Strashun . . . . .	75
Pavel Grigor'yevich Svetlov . . . . .	77
	81
Fridrikh Arturovich Tsander . . . . .	95
Ivan Karlovich Volozhinskiy . . . . .	102
Yevgeniy Yakolevich Vyrenkov . . . . .	104
Boris Grigor'yevich Yegorov . . . . .	110
I. S. Yeliglashvili . . . . .	112
Yelena Davidovna Zabliudovskaya . . . . .	113
Avlipiy Davidovich Zurabashvili . . . . .	115

FIFTIETH YEAR OF ACADEMICIAN OF THE ACADEMY OF SCIENCES  
KAZAKH SSR, U. M. AKHMEDESAFIN

[Following is a translator of an article in the Russian language periodical *Vestnik Akademii Nauk Kazakhskoy SSR* (Herald of the Academy of Sciences Kazakh SSR), Alma-Ata, No. 1, 1969, pp. 73-75.]

The name of the great scientist in the field of hydrogeology and geological engineering, academician of the Academy of Sciences Kazakh SSR, Professor, Doctor of Geological-Mineralogical Sciences, Honored Scientist of Kazakh SSR, Ufa Mandybayevich Ahmadzafin enjoys wide renown among the workers of the geological and hydrogeological service not only of Kazakhstan and Central Asia, but also far beyond their borders. The scientific works of the Mandybayevich on theoretical and applied hydrogeology are a priceless contribution to the development of Soviet science.

U. M. Ahmadzafin was born into a peasant family on 19 July 1912, in the Soviet village of Semei-Nazalskazinskaya oblast, Tselinnyy kray. Becoming an orphan, Ufa Mandybayevich very early began his work. In 1930, after receiving a high school education, U. M. Ahmadzafin entered Central Asian Industrial (now Polytechnic) Institute, where he successfully completed his studies in 1935 in the specialty of geological engineering.

After finishing at the institute, Ufa Mandybayevich, working in the Uzbek Geological Administration and Scientific Committee of Uzbekistan, actively participated in hydrogeological investigations in the irrigation regions of Central Asia; he conducted considerable work in the Fergana and Sorkhandarya Valleys, in the foothills of Kirgiz Alatau and Chinchik-Angren mountain range. At the very beginning of his professional activity, he exhibited a great affinity for scientific work, which served as grounds for sending him as a graduate student to Moscow Geological-Prospecting Institute imeni K. Ordzhonikidze, which he successfully completed in 1940 with a defense of a dissertation seeking the academic degree of Candidate of Geological-Mineralogical Sciences. Since that time, U. M. Ahmadzafin has been a tireless worker in the Institute of Geological Sciences, Academy of Sciences Kazakh SSR, directing great hydrogeological and engineering-geological works, conducted in Kazakhstan by the Institute of Geological Sciences, Academy of Sciences Kazakh SSR.

For a number of years U. M. Akhmedsafin has conducted extensive hydrogeological investigations studying the underground waters in the sandy massifs of southern Kazakhstan, which made possible the discovery of vast reserves of fresh underground waters. These works were the first to refute the theory of aridity of the deserts of the republic and demonstrated the possibility of broad utilization of the great reserves of underground waters for the development of common animal husbandry. The data of these investigations lie at the base of the doctoral dissertation, which U. M. Akhmedsafin successfully defended in 1937.

In 1957 U. M. Akhmedsafin's monograph on the underground waters of the deserts of southern Kazakhstan appeared in print. This was essentially the first great work on the underground waters of the vast arid regions not only of Kazakhstan, but also of all Central Asia. This work presented a comprehensive elucidation of the occurrence, formation, and reserves of underground waters and rational methods of their prospecting and exploitation, on the basis of a vast collection of factual data and scientific generalizations. This monograph represents a great contribution to Soviet hydrogeology and is a reference book for investigators of the desert and organizers of production.

Beginning with 1947 and in all the following years, great work was done under the guidance and with the direct participation of Ufa Mandybayevich on the study of the underground waters of central, western, and southern Kazakhstan, and prospects of their further utilization. During this period he wrote and published a number of valuable works on the underground water resources of various parts of the republic and on Kazakhstan as a whole. Even in that period, when the deep horizons of underground waters had received very little study, U. M. Akhmedsafin was occupied in the investigation of problems of the regional study of the hydrogeology of the deep-lying mineral resources of the republic. These investigations of the scientist were crowned with success -- in 1953-1954 he discovered, for the first time, up to 60 artesian reservoirs in the depths of the republic.

During the years of the Soviet people's great struggle for the extensive development of virgin lands, the collective of hydrogeologists and geological engineers of the Institute of Geological Sciences under the direction of U. M. Akhmedsafin, has been performing great work in the regions of development of virgin lands of northern and northwestern Kazakhstan, as a result of which the primary problem of water supply and the geological engineering conditions of the construction of many new sovkhozes have been successfully solved, and the conditions of water supply of the previously existing agricultural setups have been improved. During this period he proposed a newer method for compiling composite hydrogeological maps. Now U. M. Akhmedsafin, together with the collective of co-workers, is completing another summary work, which will be one of the initial bases for compiling a General Scheme of Water Supply of the Republic.

More than 100 scientific works have come from the pen of

of hydrogeology and hydrochemistry. He has written about 100 scientific articles and 10 monographs. In a short time he occupied an outstanding position at Kazakh Polytechnic (formerly Mining and Metallurgical) Institute, where from 1939 to 1950 he headed the chair of Hydrogeology and Geochemical Prospecting. He has taken active part in the training of scientific staffs, teachers, and those of the native nationality, under his guidance 11 graduate students, junior research workers, and supervisory workers of various organizations have successfully defended candidates' dissertations. His students and followers are conducting fruitful hydrogeological investigations not only in Kazakhstan, but also in Uzbekistan, Turkmenia, and other republics.

In 1949 U. M. Ahmedsafin was awarded the title of Professor; in 1951 U. M. Ahmedsafin was elected as a corresponding member, and in 1954 as a member of the Academy of Sciences of Kazakhstan SSR.

In addition to his strenuous scientific and pedagogical activity, U. M. Ahmedsafin is also performing great organizational and social work. For a number of years he has been a representative of the Water Section of the Scientific-Technical Council of the State Planning Committee of Kazakhstan SSR. In 1946-1951 he was a people's assessor of the Supreme Court of Kazakhstan SSR, a member of which he was a deputy and member of the Presidium of the Supreme Court of Kazakhstan SSR. Now he is participating in the work of scientific and scientific-technical councils of a number of organizations, the State Committee on the Utilization and Conservation of Surface and Underground Waters of Kazakhstan SSR, the Ministry of Geology and Conservation of the Mineral Resources of Kazakhstan SSR, etc.

The government has a high opinion of the valuable activities of U. M. Ahmedsafin. He has been the recipient of the order "Order of Honor," three medals, certificates, and a certificate of honor of the Supreme Council of Kazakhstan SSR. In 1951 he was awarded the title of People's Educator of Kazakhstan SSR.

Let us hope that his health will improve, that he will live long years of health and useful activity for the development of progressive Soviet science.

President of the Academy of Sciences of Kazakhstan SSR  
Ministry of Geology and Conservation of Water, Presidium of Kazakhstan SSR

Division of General Geology, Academy of Sciences of Kazakhstan SSR  
Institute of Geological Prospecting, Academy of Sciences of Kazakhstan SSR

ARTO BOGDANOVICH ALEKSA'YAN  
(On His Seventieth Birthday)

Following is a translation of an article by R. B. Dzhavadov in the Russian language periodical Azerbaydzhanskiy Meditsinskiy Zhurnal (Azerbaijhan Medical Journal), Baku, No 11, 1962, pp 6-88.

Arto Bogdanovich Aleksanyan was born into a working family on 23 August 1892 in the City of Tiflis. His father and mother were illiterate, but they did all they could so that their children would receive education.

Arto Bogdanovich began work at a very young age. As a student, he would go during the summer vacation months to work in Syatiginsk, with the neuropathologist Professor K. S. Padzhanev (a student of Belitserov). Such practice gave him much form of useful practical knowledge and was great material help, enabling him to continue his studies.

In April 1916, after completing the medical faculty of Odessa University, Arto Bogdanovich was called up to military service and sent to the Caucasus front, where, as major physician of a military section, he rendered medical aid to the wounded soldiers and local population, and at the same time conducted epidemiological observations.

After demobilization in 1918 he was the director of a hospital in the City of Tiflis, organized by a group of demobilized physicians on cooperative principles. At the same time he taught hygiene in a medical secondary school.

In 1920, before the establishment of the Soviet power in Armenia, he was invited to the village of Tokhi (Baranavskiy rayon; Armenia), the village community of which had decided to have its own doctor.

Working as a physician in the village of Tokhi, he entered the ranks of the Red partisans and participated in the Tiri-Kazakh peasant uprising.

The morning of 29 November 1920 will always remain fresh in his memory. On this day he arose with his pistol on the side of young Soviet Armenia.

From 1920 to 1926 A. B. Aleksanyan worked as a physician in the agricultural localities of the Dilzhan and Marmayaz districts of Armenia, where a village hospital or village nursery in consultation

[with a dairy kitchen (Baraninskiy village section, now Noyemberyanskiy rayon), as well as a sanitary-hygienic laboratory, and other medical institutions (Nor-Bayazet, now Kamo) were organized for the first time.

The years of village life and work, as recalled by Professor A. B. Aleksanyan, were the happiest in his entire life. These years were useful for the future of his medical activity: the colossal, diversified medical practice gave him a rich fund of invaluable knowledge and considerable practice.

As the epidemiologist of Nor-Bayazet district, he succeeded in investigating all the population points of the district, and on the basis of this revealed numerous family foci of leprosy, studied their epidemiological characteristics, and personally sent all the detected lepers to a leprosarium, which made it possible to liquidate the basic foci of this infection, which had reigned for centuries in the population points of the district.

Working in the village, he believed it his duty and obligation to occupy himself at the same time with problems of sanitary culture -- the construction of baths and water supplies, the dwellings of the peasants, the draining of swamps, sanitary inspection of the slaughtering of livestock, the study of the climate of the villages, and the propagandization of sanitary knowledge.

In 1927 Arto Bogdanovich was named deputy head, and in 1929 head of the Sanitary-Epidemiological Division of the Peoples Commissariat of Public Health of Armenian SSR.

Pre-revolution Armenia had no staffs of epidemiologists, and there were no scientific and practical medical institutions. Epidemiology in the Republic had to be constructed literally in vacuo. Arto Bogdanovich eagerly undertook this task. Great efforts, time, and labor were required to eliminate the obstacles that at first seemed insuperable.

In 1927 the first sanitary-hygienic laboratory, which served simultaneously as an epidemiological base, was organized in Yerevan. Later this laboratory was reorganized into the Central Republican Sanitary-Hygienic Laboratory, which at the initiative of Arto Bogdanovich and with his direct participation was transformed into the Republican Institute of Sanitation and Hygiene, where he served in the post of deputy director of the scientific section and simultaneously as head of the epidemiological section of this institute; subsequently the institute was converted into the Institute of Epidemiology and Hygiene of the Ministry of Health, Armenian SSR, and it is now a powerful scientific research institution of the Republic.

From 1935 to 1940, A. B. Aleksanyan worked again in the apparatus of the Peoples Commissariat of Public Health in the post of Chief State Sanitary Inspector of the Republic and simultaneously as Chief of the Antiepidemic Administration. He continued to pay great attention to problems of providing the rayons of the republic with sanitary-epidemiological bases, and with specialists in epidemiology, microbiology, and hygiene.

[In 1941, an antitularemia station, which has now grown into a

large antipLAGUE institution, was opened in Yerevan at the initiative of A. B. Aleksanyan in order to prevent the possibility of carrying especially dangerous infections outside the cordon. At the same time he paid constant attention to the task of training and retraining medical staffs.

Arto Bogdanovich began his teaching work in 1928, first as assistant at the chair of experimental hygiene, and from 1931 on as an independent teacher of epidemiology at Yerevan Medical Institute.

In 1931 A. B. Aleksanyan, jointly with other specialists, undertook the problem of the need for the organization of a sanitary-hygienic faculty at Yerevan Medical Institute, a task that was accomplished in this same year. Then the chair of epidemiology, of which he was head and is still heading at present, was organized.

A. B. Aleksanyan dearly loves teaching activity, and loves to train young staffs for the country. "I should acknowledge," Arto Bogdanovich has often said, "that, while teaching and enthusiastically training the young, at the same time I myself have grown and developed, becoming acquainted with much that I had not known or experienced."

By a resolution of the Scientific Council of Yerevan Medical Institute and the Higher Qualification Commission of the Peoples Commissariat of Public Health, A. B. Aleksanyan was awarded the title of Docent in 1935, in 1936 he was awarded the scientific degree of Candidate of Medical Sciences, and in 1938 he was awarded the scientific title of Professor. In 1940 he completed his doctoral dissertation and received the scientific degree of Doctor of Medical Sciences. Arto Bogdanovich defended his doctoral dissertation, in which Academician N. F. Gamaleya was a consultant, in the City of Baku at Azerbaydzhan Medical Institute.

The chair headed by A. B. Aleksanyan has produced 35 dissertations -- 31 candidates and 4 doctoral dissertations.

Arto Bogdanovich is the author of 121 scientific works, including monographs, handbooks, and textbooks on general and particular epidemiology.

The principal themes of his scientific research work have been problems relating to local pathology, as well as problems of immunity, its theory and practice. In particular, he has been occupied with problems of the etiology, epidemiology, immunity, and prophylaxis of diphtheria and dysentery for more than 30 years. On the basis of many years of his own observations, as early as 1939 he advanced a number of scientifically well substantiated theories, permitting the question to be posed of the possibility of total liquidation of diphtheria in the Soviet Union (All-Union Conference of Microbiologists, Moscow, 1939).

Typhus abdominalis, paratyphoid fever A and B, bacterial dysentery, amebiasis, small pox, diphtheria, scarlet fever, epidemic cerebrospinal meningitis, exanthematos fever, tularemia, rat-bite fever, brucellosis, food poisoning, plague; rodents, their species composition, distribution, and ectoparasites; the phenology of flies under various climatic conditions and the significance of the fly

factor; testing of new vaccines to evaluate laboratory data and in epidemiological experiments; problems of disinfection and new disinfectants have been studied by A. B. Aleksanyan and his students.

In the planning and organization of scientific medical investigations, A. B. Aleksanyan has constantly considered not only the development of theoretical problems, but also the immediate needs of the practical public health organs. The results of the investigations, depending on their value, were brought out for broad consideration for their introduction into public health practice. Moreover, he has constantly considered it his duty to organize scientific investigations in close collaboration with the scientific institutions of our country.

Especially noteworthy are his constant efforts and cares directed toward the further development of a close relationship and effective contact between scientific and practical workers of the brother republics of Georgia and Azerbaijan. He is highly esteemed and constantly turned to for collaboration by the physicians of Zakavkaz'ye.

Simultaneously with his scientific pedagogical activity, A. B. Aleksanyan constantly participates in social life. He actively participates in the work of a number of scientific-practical gazettes and journals, various scientific societies, committees, medical councils, many of which he heads. A. B. Aleksanyan has successfully represented Soviet public health at international congresses and conferences in Czechoslovakia, England, Sweden, and other countries.

The government highly esteems the role and activity of Professor A. B. Aleksanyan in the development of our country's epidemiology, hygiene, and the preparation of scientific and medical staffs, and has awarded him with the orders of Lenin, the Red Star, the "Badge of Honor" and several medals.

In 1945 A. B. Aleksanyan was elected Corresponding Member of the Academy of Medical Sciences USSR; he has been awarded the title of Honored Scientist. In 1960 Arto Bogdanovich was elected member of the Academy of Medical Sciences USSR.

Let us wish dear Arto Bogdanovich Aleksanyan health, long years of life, and fruitful work for the welfare of Soviet public health.

MIKHAIL GERASIMOVICH ANAN'YEV  
(On His Sixtieth Birthday)

[Following is a translation of an article by a group of co-workers of the Scientific Research Institute of Experimental Surgical Equipment and Instruments in the Russian language periodical Eksperimental'naya Khirurgiya i Anesteziologiya (Experimental Surgery and Anesthesiology), Moscow, No 4, 1962, p 96.]

In May 1962 the eminent surgeon, great public health organizer, director and scientific supervisor of the Scientific Research Institute of Experimental Surgical Apparatus and Instruments of the Ministry of Health USSR, M. G. Anan'yev, had his sixtieth birthday.

Mikhail Gerasimovich Anan'yev was born into a peasant family in May 1902. In 1926 he completed Tomsk Medical Institute, after which he worked for almost 20 years in Siberia, where he progressed from surgeon of a little hospital in the city of Kirensk on the Lena to chief surgeon of Krasnoyarskiy kray, head of the kray Public Health Division. M. G. Anan'yev has been elected a deputy of the Supreme Council USSR.

Mikhail Gerasimovich spent the years of the Second World War at the front in the post of army surgeon, where he also proved to be a brilliant organizer and highly qualified specialist.

M. G. Anan'yev has always manifested interest in scientific work; his first articles were written in Siberia. Since 1949 he has worked in the Institute of Surgery imeni A. V. Vishnevskiy of the Academy of Medical Sciences USSR, where his enormous practical experience and great erudition have permitted him to rapidly emerge as one of the eminent representatives of the this outstanding scientific surgical school. His investigations in the field of experimental and suppurative surgery, in particular, the treatment of inflammatory diseases of the joints and works on the problem of the transplantation of organs, where he was one of the first to use experimentally the apparatus which had just appeared at the time for the suture of blood vessels, date from this period.

Since 1954 Mikhail Gerasimovich has headed the Scientific Research Institute of Experimental Surgical Apparatus and Instruments. During these years the institute has been transformed into a great scientific institution, and has earned the recognition both of Soviet, and of foreign surgeons. Under the direct scientific supervision of

M. G. Anan'yev, Soviet apparatus for artificial circulation, an artificial kidney, and a number of electromedical instruments have been designed. The collective of the institute has developed hundreds of new apparatuses and instruments, some of which are the pride of Soviet medical science and technology.

The Hero of the Day has published more than 30 scientific works on problems of artificial blood circulation, electric sleep and electro-narcosis, theoretical problems of the construction, use, and introduction of Soviet suturing apparatuses. Many of his works have been printed in the foreign medical press.

M. G. Anan'yev has always paid great attention to the development and training of scientific staffs. In recent years four doctoral and seven candidates dissertations have been prepared in the institute by physicians and engineers.

M. G. Anan'yev's role as a popularizer of the achievements of Soviet medical science and technology has been extremely great in our country and abroad. Possessing remarkable oratorial talent, attracting listeners by his profound knowledge and broad erudition, he knows how to make complex and important problems simple and comprehensible to his listeners.

The Soviet government, highly esteeming M. G. Anan'yev's work, has rewarded him with many orders and medals. He is a member of the Party Bureau of the institute, and a Deputy of Moscow Council.

On his birthday, his friends and associates wish dear Mikhail Gerasimovich many years of health and active creative work for the welfare of our country.

## THE ELDER OF SOVIET PHARMACOLOGISTS

[Following is a translation of an article by D. Krasil'shchikov, Scientific Secretary of the Institute of Local Experimental Medicine, Academy of Sciences Uzbek SSR, in the Russian language newspaper Pravda Vostoka (Truth of the East), Tashkent, 9 October 1962, p 4.]

Few people can be found who do not use drugs in one form or another, but apparently they know little of the great work that the scientists who fill the health arsenal are performing.

One of the most eminent pharmacologists of our time is member of the Academy of Medical Sciences USSR, Professor Sergey Viktorovich Anichkov.

Carrying on the best traditions of our country's science, he has successfully developed Soviet pharmacology. S. V. Anichkov is the author of 150 scientific works in the field of experimental pharmacology. He is the founder of pathological pharmacology of the circulatory apparatus. His profound investigations in the field of pharmacology of the cardiovascular system have supplemented pharmacology with valuable theoretical data and enriched medicine in such effective medicinal agents as dibazol, widely used in medical practice.

For many years S. V. Anichkov devoted his scientific activity to neuropharmacology, especially the pharmacology of the vegetative nervous system. On the basis of his work, a number of neurotropic drugs have been created, such as metamizol, methylspasmolythin, hexonium B, paramyon, etc.

S. V. Anichkov's services have been great in the training of scientific staffs. Under his supervision, 11 doctoral and 40 candidates dissertations have been prepared.

As a member of the editorial board for the translation into Russian of the major work of the eminent eastern scientist Abu Ali Ibn Sinc, "Canon of Medical Science," S. V. Anichkov has given the Uzbek scientists great practical aid. He is one of the initiators of the organization of the division of eastern medicine in the Institute of Local Experimental Medicine, Academy of Sciences Uzbek SSR, having trained for this division highly qualified scientific staffs of pharmacologists.

With 70 years behind him, 50 of which he has devoted to scientific and pedagogical activity, S. V. Anichkov, as before heads the

[glorious plciad of Soviet pharmacologists]

On 8 October 1962, on the date of his jubilee, the medical and biological workers of Uzbekistan raised their voices in words of cordial congratulations to the eminent scientist and expressed heartfelt wishes for good health and new scientific discoveries for the good of Soviet science.

PAVLOV'S IDEAS OF NERVISM IN PHARMACOLOGY  
(On the Seventieth Birthday and Fiftieth Anniversary  
of Scientific Activity of Member of the Academy  
of Medical Sciences USSR, Professor S. V. Anichkov)

[Following is a translation of an article by D. A. Biryukov  
in the Russian language periodical Fiziologicheskiy Zhurnal  
SSSR im. I. M. Sechenova (Physiological Journal of the  
USSR imeni I. M. Sechenov), Leningrad, Vol 48, No 10,  
1962, pp 1287-1289.]

We shall not undertake the complex task of giving a more or less complete survey of the results of S. V. Anichkov's vast half century of scientific work. This task could be fulfilled only in a series of outlines devoted to it.

We might state, however, that in S. V. Anichkov's creative aspect, features of rare unity in his researches emerge most vividly. Regardless of the very great number of works (more than 150), all written by him, it is easily observed that, in spite of the varied objects of investigation, in spite of the variety of observational procedures (S. V. Anichkov has invariably manifested a positive attraction toward this factor all through his work), one can follow a basic line, a guiding concept, which at various times but inevitably has "animated" his experiments. The sensitive young mind of the student Anichkov avidly drank in these ideas at the time of his work in I. P. Pavlov's laboratory in 1912. That is why later, when S. V. Anichkov was forced to continue his scientific activity as a student at Kazan' University it was not at all by chance that he returned to the Pavlov laboratory, then headed by one of the leading students of I. P. Pavlov -- V. N. Boldyrev.

Occupied here in the study of the periodic motor activity of the stomach (even conducting experiments on himself!), S. V. Anichkov thereby was in the very essence of the Pavlovian concepts, the general line of which was defined as the theory of nervism.

S. V. Anichkov later frequently returned to the problem of the periodic activity of the empty stomach, and this physiological index is now being used by his school in a study of the influence of drugs on the central nervous system.

I believe that another very significant cycle of S. V. Anichkov's works, conducted under the direct influence of the interest of his

[teacher, Academician N. P. Kravkov on isolated organs, in no way contradicted the concepts on which S. V. Anichkov was raised in the laboratory of Pavlov.]

In fact, although he here used analytical methods of observation, investigating isolated organs, he did this to study the activity of the human organs at a time when, strictly speaking, there was no synthetic approach to the resolution of such problems. Moreover, Anichkov's experiments were the first in the world history of the problem, and at this stage of its study, analytical methods were quite essential. The creator of synthetic physiology, I. P. Pavlov, frequently emphasized that for certain stages of investigation, it in no way excludes the necessity for analysis.

In works studying the action of the cardiac glucosides (conducted in collaboration with P. Trendelenburg), it apparently was not by chance that the heart in the state of decompensation of its activity was selected as the object of observation. In this, as it were, was reflected a tendency to approach the study of problems of regulation and self-regulation, i.e. the Pavlovian problems that later so strongly entered the circle of interests of Sergey Viktorovich. The possibility of restoring, recompensating the work of the heart was achieved.

Beginning with 1935, S. V. Anichkov's interests were more and more concentrated on the problems of regulation of organ activity. Here we should mention first of all the outstanding theories of his works on the systematic analysis of the chemical sensitivity of the carotid sinus. In S. V. Anichkov's investigations of the pharmacology of the zone of the carotid sinus, we again encounter the Pavlovian idea of the influence of pharmacological substances on the receptor formations. The student ingeniously developed the idea of the teacher. These works, brilliant from the theoretical, procedural, and practical scientific standpoints, not only established S. V. Anichkov's priority in world literature on this problem, but also brought him wide renown in our country and abroad.

In the last 15 years, S. V. Anichkov has concentrated all his work on neuropharmacology and a search for new neurotropic agents. He and his associates are the authors of outstanding works on the pharmacology of the vegetative nervous system. On the basis of the action of various substances on the cardiac ganglia, motor system of the stomach, pupils, medullary layer of the adrenals, hypophysis, etc., he constructed his own classification of the choline-reactive systems, dividing them into N- and M-choline reactive systems. Studying the pharmacology of M- and N-choline reactive systems in the synapses of the brain, Anichkov substantiated the representation of the central cholinolytics as a special class of medicinal substances.

The successes of theoretical or applied pharmacology at the modern level of development of these sciences can be especially significant if the pharmacologist does not limit the desired scope and direction of the research only to observations of the action of

previously known substances, but utilizes the possibility of seeking new substances with a "set" desired character of the pharmacological action, when the study becomes active, directed. This can be realized only as a result of joint creative researches of pharmacologists and chemists. Proceeding in precisely this way, S. V. Anichkov has risen to especially great heights in the successful development of the Pavlovian theory in pharmacology, collaborating creatively with Corresponding Member of the Academy of Sciences USSR, N. V. Khrusov-Borisov. The development of neuropharmacology has become the basic field in which the division of pharmacology of the Institute of Experimental Medicine has been working under the guidance of S. V. Anichkov for the last 12 years.

In S. V. Anichkov's school, great attention continues to be paid to the study of the above mentioned catetic chemoreceptors, which possess especially high sensitivity to certain chemical agents and play a vital role in the organism.

The search for new neurotropic agents with central action, as S. V. Anichkov himself has indicated, has been based on the idea of imitating in chemical structure the substances that take part in natural biochemical processes of the organism. This idea had already previously been successfully realized by Soviet and foreign scientists in the creation of antibacterial substances, antivitamins, antihormones, etc. The use of this idea to search for substances with a predominant action on the central nervous system made it possible to deepen the understanding of the action of the central neurotropic substances and supplement their arsenal.

A number of works have been directed toward a study of the pharmacology of local anesthetics, i.e. substances that, when applied locally, reversibly inhibit the sensitivity of all sorts of receptors. New data have been obtained on the connection between their structure and action on the tissue metabolism.

As I. P. Pavlov has indicated, not only the nerve endings, but also the cells of the central nervous system possess high sensitivity to pharmacological substances. In the field of the pharmacology of neurotropic substances with central action, the work of the collective has been directed chiefly toward a study and search for sedatives, to calm the central nervous system.

Finally, a site of the selective action of many neurotropic substances is the central interneuron synapses, as well as the synapses of the effector pathways. The pharmacology of the substances influencing the transfer of nerve impulses in the synapses, in other words, substances with mediator action, has been the subject of a large group of investigations of Sergey Viktorovich and his students. Here the principal attention has been paid to substances that inhibit the synaptic transfer of nerve impulses, i.e. the so-called blocking agents.

Special study has been given to the influence of neurotropic substances on the trophic processes. Physiology and pathology have at their disposal numerous data on the influence of the nervous system

[ ]

on the trophical systems of the executive organs. The influence of pharmacological substances on the trophical processes by means of their action on the nervous system has so far received very little study. And yet, the possibility of such an influence and its utilization for therapeutic action on dystrophic processes are obvious (S. V. Anichkov).

This has also been brilliantly demonstrated in the great work on models of experimental gastric ulcer and neurogenic dystrophy of the cardiac muscle.

Great interest has been attracted by the broad study of the action of neurotropic substances on the endocrine glands, conducted in the laboratories of S. V. Anichkov. It has been demonstrated that the secretions of the medullary layer of the adrenals, neurohypophysis, and ACTH of the anterior lobe of the hypophysis can change sharply and rapidly under the influence of neurotropic substances.

In a survey of the works of his school on neuropharmacology, S. V. Anichkov wrote: "The sum of our works on neuropharmacology should include the fact that a directed influence can be exerted on the most varied functions of the organism by neurotropic agents.

This premise in no way excludes the possibility of direct influence on the function of the executive organs by pharmacological agents, which act on them selectively. Undoubtedly such a direct selective influence will give an even more pronounced picture in comparison with indirect action through the nervous system. However, in those cases when disruption of the neural regulation plays the deciding role in the etiopathogenesis of a pathological process, i.e. in the case of the so-called neurogenic diseases, neurotropic substances take on the primary therapeutic significance."

Neuropharmacology serves not only practical and clinical medicine, (psychiatry, pediatrics, nervous diseases, surgery, anesthesiology), but also has far broader significance. Following the idea of "nervism" we recognize that all the organs and all the activity of the organism can prove to be under the influence of the central nervous system. It follows from this that neuropharmacology becomes an inseparable part of Pavlovian physiology and pharmacology. A distinguished, outstanding role in the creation of Pavlovian pharmacology has been that of its founder -- Sergey Viktorovich Anichkov.

THE ELDER OF SOVIET CHEMISTS  
(Eighty-Fifth Birthday of Academician A. Ye. Arbuzov)

[Following is a translation of an article by K. M.  
Anisimova of the Moscow Higher Technical School imeni N.  
E. Bauman, in the Russian language periodical Priroda  
(Nature), Moscow, No 9, 1962, pp 102-104.]

In September 1962, Academician Aleksandr Yermelingel'dovich Arbuzov, the great organic chemist, had his eighty-fifth birthday. Soviet chemists call him their elder. The scientific merits of A. Ye. Arbuzov are immeasurable. The profundity of his erudition, and his broad, many-sided education justify our considering him an encyclopedic scientist. Continuing the work of N. N. Zinin, A. M. Butlerov, A. M. Zaytsev, A. Ye. Arbuzov now heads the Kazan' Chemical School.

Aleksandr Yermelingel'dovich Arbuzov was born on 11 September 1877 in the village of Arbuzov-Baran, Spasskiy district of Kazan' guberniya. After finishing high school, he entered the natural science department of the physicomathematical faculty of Kazan' University, selecting chemistry as his specialty. Even at that time Aleksandr Yermelingel'dovich was already attracting attention by his rare abilities. In the laboratory of A. M. Zaytsev, he conducted his first experimental work, "On Allylmethylphenylcarbinol." After finishing at the university, A. Ye. Arbuzov was offered the position of assistant to Professor F. F. Selivanov at the chair of organic chemistry and agricultural analysis in Novo-Aleksandriya Institute of Agriculture and Sylviculture. This educational institution, splendidly equipped, attracted the best manpower. Suffice it to state that from 1892 to 1895 the founder of modern scientific soil science, V. V. Dokuchiev taught here; in particular he founded here the first chair of soil science in Russia. Even earlier, in 1882-1883, the post of docent in the chair of mechanics was occupied by the son of N. N. Zinin, also Nikolay Nikolayevich, who was subsequently Professor at Warsaw University.

The 11-year period of A. Ye. Arbuzov's stay in Novaya Aleksandriya was saturated with intensive scientific researches. During this time appeared many scientific works of A. Ye. Arbuzov, written in the journal of the Russian Physicochemical Society. This same society awarded Aleksandr Yermelingel'dovich with the prize imeni

N. N. Zinin and A. A. Voskresensky for his work "On the Structure of Phosphorous Acid and Its Derivatives." In this investigation the scientist established the structure of phosphorous acid and its derivatives and discovered the catalytic isomerization of esters of phosphorous acid into esters of alkylphosphinic acids, now known under the name of the "Arbuzov rearrangement." This work became the subject of a masters dissertation and was marked by the prize of the Russian Physicochemical Society. The results obtained served not only as a basis for the further works of A. Ye. Arbuzov and his students, but also as a foundation, upon which all the investigations in this field have been constructed. Eminent foreign scientists -- Sh. Wurta, T. Graham, A. Hofmann -- have been occupied with the structure of phosphorous acid. However, before Arbuzov this question had not been resolved; it was he who indicated the shortcomings in the experimental works that had been conducted before him, and was the first to arrive at indisputable conclusions.

"Without exaggerating, we can state," writes A. N. Nesmeyarov, "that the Arbuzov isomerization has become the high road of synthesis in the series of organophosphorus compounds."<sup>\*</sup>

A. Ye. Arbuzov worked as an assistant for six years. He combined his profound scientific work with active social activity. He was one of the alternates, and then director of the scientific society, which was modestly called "Circle of Lovers of Natural Science, Agriculture, and Sylviculture."

In 1906 A. Ye. Arbuzov, at that time adjunct-professor, occupied the chair of organic chemistry of agricultural analysis. His possibilities for scientific work grew. In 1907 and then in 1911 he visited Germany, France, Switzerland, and Italy, where he gained an acquaintance with the scientific works conducted there.

However, Novo-Aleksandriya Institute, where chemistry was essentially an auxiliary discipline, presented A. Ye. Arbuzov with too narrow a base, on which he could not entirely realize the new ideas that had captivated him. It was necessary to organize a broader creative collective. "In order to be a real scientist," subsequently wrote Aleksandr Yermingel'dovich, "I had to develop my first success, I had to create a direction in science, I had to try to create a new school, or at least have my own students."<sup>\*\*</sup> Under the conditions of Novaya Aleksandriya this was impossible -- the institute trained agronomists and sylviculturists and not chemists. Hence his wish to return to Kazan' was quite natural. In 1911 A. M. Zaytsev died, and A. Ye. Arbuzov was recognized as the best of his successors.

He was then 34 years of age. He summed up his view of the tasks placed before him in the following words: "We understand a scientific

\*See A. Ye. Arbuzov. Concise Outline of the Development of Organic Chemistry in Russia, 1946, p. 83.

\*\*See Smena (Change), 1947, No. 15, p. 6.

school to be a stable scientific direction, the development of which is guaranteed over a more or less long-range period of time. The success of this development is determined by the presence of talented continuers of the scientific direction. The history of the development of the sciences, especially the experimental sciences such, for example, as physics and chemistry, shows that the most important scientific discoveries and achievements, frequently marking a new stage in the understanding of nature, have been made by young scientists, on the average 25 to 45 years of age."\*

We cannot state that ideal conditions awaited him in Kazan'. A. Ye. Arbuzov had to expend enormous efforts and completely re-equip the laboratory. "Only after the adaptation of the laboratory to modern conditions and methods of experimentation," states the scientist, "did I feel that I had my feet on solid ground and could develop intensive activity."\*\*

A. Ye. Arbuzov is one of those experimental researchers who love to do everything themselves. Knowing, for example, how important this is for chemists, the scientist published his "Concise Handbook on the Independent Study of the Art of Glass Blowing," in which, by the way, he himself has achieved great mastery, as early as 1912.

In 1915 A. Ye. Arbuzov defended his doctoral dissertation at Kazan' University on the topic "Phenomena of Catalysis in the Field of Transformations of Certain Phosphorus Compounds." Here the author expanded the questions he had taken up in his masters dissertation, extending the catalytic transformations under the action of alkyl halides to esters of phenylphosphinous acids and to esters of sulfurous acid. A. Ye. Arbuzov's views have been confirmed by the modern theory of homogeneous catalysis.

A. Ye. Arbuzov's practical activity was clearly manifested during the period of the First World War. In spite of the fact that Russia was the homeland of many remarkable discoveries in the field of chemistry, it purchased its drugs abroad. It is not difficult to imagine the serious position in which the medical service of the Russian army found itself. It was on the initiative of A. Ye. Arbuzov that a pharmaceutical factory was set up in Kazan'. The scientist considered his principal task to be the training of qualified staffs of chemists and technologists, and he solved this problem brilliantly.

A. Ye. Arbuzov's activity became especially fruitful after the Great October Socialist Revolution. Occupying the chair of organic chemistry and the post of Dean of the Physicomathematical Faculty in the University, he was at the same time one of the founders of the Chemicotechnological Institute, participated in the organization of Kazan' Pedagogical Institute, and simultaneously undertook the supervision of chairs in the Veterinary Institute and in the Institute of

\*See Smena (Change), 1947, No. 15, p. 6.  
\*\*Ibid.

### Agriculture and Sylviculture.

It would be difficult to talk in a small article about the many-faceted activities of A. Ye. Arbuzov. Let us recall that, selected as a Member of the Academy of Sciences USSR in 1942 (he had been Corresponding Member for 10 years before that), he was the organizer of the Kazan' affiliate of the Academy of Sciences USSR, and in 1945 became a representative of the Presidium of this affiliate; at the same time he was permanent director of the chemical institute bearing his name.

Hero of Socialist Labor, A. Ye. Arbuzov has invariably been elected Deputy of the Supreme Council USSR since 1946. A. Ye. Arbuzov's merits are highly esteemed by the Soviet government, which has awarded him the title of Honored Scientist of the RSFSR and has three times rewarded him with the order of Lenin, as well as the order of the Workers' Red Flag and the medal "For Valiant Work in the Great Patriotic War, 1941-1945."

A. Ye. Arbuzov has twice been laureate of the state prize.

In conclusion let us note still another feature that distinguishes A. Ye. Arbuzov among other Soviet chemists. He has manifested profound interest in the past of the field of knowledge that he has developed.

Considerable space in a list of his works is occupied by splendid characterizations of Russian and foreign scientists. He has written much on the Kazan' school of chemists that he founded. A considerable portion of his works has found reflection in the monograph "Concise Outline of the Development of Organic Chemistry in Russia."

It is quite proper that, when in 1946 the Royal Society of London, marking the 300th anniversary of the birth of I. Newton, invited creative scientists of the entire world, the Soviet delegation was headed by Aleksandr Yermilinovich Arbuzov. We cannot help but present the following lines from his speech at this unique forum of scientists of all countries. "...The vast, practically infinite amounts of energy latent in the depths of the atoms of the matter surrounding us, should from now on be provided for the service and welfare of all the peoples of the world. All the best representatives of international science are agreed on the fact that the further development of the science of atomic energy should be developed precisely along this line. The Soviet scientists, whom I represent, firmly believe that a full mastery of atomic energy will serve as a foundation of peace for all the world."\*

\*Vestnik AN SSSR (Herald of the Academy of Sciences USSR), 1946, No. 11, p. 87.

DOCENT I. I. BUYAKAS

[Following is a translation of an article in the Russian language periodical Gigiyena i Sanitariya (Hygiene and Sanitation), Moscow, No 6, 1962, p 123.]

Head of the chair of hygiene of the Medical Faculty of Vil'nyus State University imani V. Kapsukas, Candidate of Medical Sciences, Honored Physician of Lithuanian SSR, docent Ignat Ignat'yevich Buyakas has completed 70 years of life and 52 years of medical scientific, pedagogical, and social activity.

Ignat Ignat'yevich was born on 31 January 1892 into a poor Lithuanian family. At the age of 18 he finished the Poltava zemstvo Surgeons Assistant School and was sent to fight a cholera epidemic in Zolotonoshskoye zemstvo. From this time on I. I. Buyakas has ceaselessly worked in the field of prophylactic medicine. In 1913 he participated in the liquidation of a cholera epidemic in Bulgaria. In the First Imperialist War, I. I. Buyakas worked as a regimental surgeons assistant.

After the victory of the Great October Socialist Revolution, I. I. Buyakas was sent to fight cholera in Khar'kovskaya oblast and exanthematous fever in the Donets basin and in the Northern Caucasus. After liquidating the epidemic, he again returned to school, and in 1933 finished at the sanitary faculty of the Medical Institute at Rostov on the Don. After finishing at the institute, I. I. Buyakas was sent to the new developments in the Urals, where he conducted sanitary-antiepidemic work. From 1933 to 1936 he worked as sanitary physician in Motovilikhinskiy rayon of Perm, and then for eight years in Sverdlovsk. In July 1944, I. I. Buyakas returned to his homeland in Lithuanian SSR and was named to the post of Chief State Sanitary Inspector and Deputy of the Peoples Commissariat of Public Health of Lithuanian SSR. Under the very difficult postwar conditions, lacking staffs and sanitary techniques, I. I. Buyakas participated in great work for the re-establishment of Soviet public health and the liquidation of epidemic outbreaks in Lithuanian SSR. I. I. Buyakas remained at this patriotic work until 1950.

In 1945 he was elected to the post of Head of the Chair of Hygiene. In 1946 I. I. Buyakas was accepted as a member of the Communist Party of the Soviet Union. He generalized his experience in combating exanthematous fever in Lithuania in a candidates

dissertation, which he defended in 1949. In 1951 he was awarded the honorary title of docent. From 1951 to 1952, Ignat Ignat'yovich was Dean of the medical faculty. In 17 years of scientific pedagogical work he has published 36 works.

Since 1947 I. I. Buyakas has been a member of the Board of Directors and Chairman of the Lithuanian Department and member of the Board of Directors of the All-Union Scientific Society of Hygienists, as well as a member of the editorial council of the journal Gigiyena i Sanitariya (Hygiene and Sanitation).

Congratulating Ignat Ignat'yovich on his glorious anniversary, let us wish him many years of working life, health, and successes in his work.

Board of Directors of Lithuanian  
Department of the All-Union Scien-  
tific Society of Hygienists and  
Sanitary Physicians  
Editorial Board of the Journal  
Gigiyena i Sanitariya

## YEVGENIY IVANOVICH CHAYKA

[Following is a translation of an article in the Russian language periodical Vrachebnoye Delo (Medical Matters), Kiev, No 6, 1962, pp 154-155.]

In February, Honored Scientist of the Ukrainian SSR, Doctor of Medical Sciences, Professor Yevgeniy Ivanovich Chayka had his sixtieth birthday.

Ye. I. Chayka was born in the village of Rozbyshevka of Gad-yachskiy rayon, Poltavskaya oblast. After finishing Kiev Medical Institute in 1927 he received an assignment to Kiev City Hospital imeni October Revolution, in the post of intern. Yevgeniy Ivanovich's scientific activity began in the central laboratory and dissection room of this hospital. The young physician, working simultaneously in the clinic and the laboratory, grew more and more a master of pathological anatomy. In a comparatively short time he was able to gain considerable experience in the field of pathological-anatomical techniques, and since 1933 he has headed the pathological-anatomical department of the hospital and the central laboratory.

From 1930 to 1936 he was also a scientific co-worker in the morphological laboratory of the Academy of Sciences Ukrainian SSR.

In 1934 Ye. I. Chayka was confirmed in the post of docent of the chair of pathological anatomy of Kiev Medical Institute, and from 1939 to the present time he has headed this same chair.

In 1941 he successfully defended a doctoral dissertation on the topic: "The Connective Tissue Skeleton of the Heart and Its Significance in Pathology." This large investigation was a great step forward in the field of study of the connective tissue pathology.

Professor Ye. I. Chayka has published more than 40 scientific works. A considerable portion of them have been devoted to the study of the mesenchymal, primarily the vascular reactions, observed in the human tissues and organs under pathological conditions.

Even in his early works, devoted to acute gastrointestinal and renal hemorrhages in exanthematous fever, as well as various forms of the organism's reaction in septic diseases, Ye. I. Chayka assigned the leading role in the pathogenesis of the observable vascular changes primarily to the capillary pathology.

Subsequently he investigated the mesenchyma of the organs, in particular -- the myocardium, in acute and chronic infectious and

infectious allergic diseases.

Ye. I. Chayka relates the development of myocarditis during these states to a disruption of the permeability of the vascular walls. His works pertaining to the morphological changes in brucellosis, alimentary dystrophy, Bright's disease, diseases of the hematogenic organs, and many others are also well known.

During the period after the Second World War, Professor Ye. I. Chayka and the collective of the chair under his supervision paid great attention to the study of changes of the peripheral vegetative nervous system during a number of diseases, especially in hypertension.

His works studying the morphology of precancerous states and early forms of cancer of the cervix, conducted in collaboration with clinicians, are of great practical significance.

The scientific works of Ye. I. Chayka and his students are distinguished by the collection of considerable factual material, careful treatment and documentation. He pays great attention to the introduction of new research methods as applied to pathological anatomy. Histochemical investigations are currently in successful use in the laboratory under his direction, in a study of the nature of collagenosis and tumors.

Ye. I. Chayka has a very considerate and benevolent attitude toward young scientific staffs. Seven doctoral and 20 candidates dissertations have been written under his guidance. These figures do not include many clinical dissertations, the morphological section of which was conducted under the direct supervision of Yevgeniy Ivanovich.

Professor Ye. I. Chayka spends considerable efforts in teaching. His extremely comprehensive and memorable lectures with demonstrations of the preparations are always attended with interest by students and physicians.

Many physicians -- dissectors of the periphery -- turn to the laboratory directed by Professor Ye. I. Chayka for consultation; a large number of pathological-histological investigations are conducted here by way of aid to the city and rural hospitals of the republic.

Ye. I. Chayka engages in considerable organizational, procedural, and social work. For many years he has participated in the activity of the Kiev Society of Pathologists, serving as its chairman, and is a member of the Scientific Council of the Ministry of Health Ukrainian SSR.

For 13 years he has been deputy director of the Medical Institute, heading the scientific work of the entire collective.

For many years of fruitful scientific and pedagogical activity, Ye. I. Chayka has been awarded the title of Honored Scientist by a Resolution of the Presidium of the Supreme Council Ukrainian SSR; he has been awarded the orders of the Workers' Red Flag, Red Star, "Sign of Honor," and the medal "For Victory Over Germany."

Let us wish the dear hero of the day health, many years of life, and further creative successes for the welfare of our country.

ARKADIY VISSARIONOVICH DZHORBENADZE  
(On His Sixtieth Birthday  
and Thirty Fifth Year of Scientific Pedagogical Activity)

[Following is a translation of an article in the Russian language periodical Arkhiv Patologii (Archives of Pathology), Moscow, No 10, 1962, pp 94-95.]

On 18 January 1962, the physician and Honored Scientist of Georgian SSR, Doctor of Medical Sciences, Professor Arkadiy Vissarionovich Dzhorbenadze, had his sixtieth birthday and completed 35 years of scientific, pedagogical, medical, and social activity.

A. V. Dzhorbenadze was born in Georgia. In 1928 he finished the medical faculty of Tbilisi State University and remained as an assistant at the chair of pathological anatomy of this faculty. From 1937 on he occupied the post of docent of this same chair. In 1947 he defended his doctoral dissertation.

From 1933 to 1945 Arkadiy Vissarionovich held more than one office in the Georgian Zootechnical-Veterinary Institute, as docent of the chair of pathological anatomy. Since 1949 he has been head of the chair of pathological anatomy and forensic medicine of Tbilisi State Institute For the Advanced Training of Physicians.

A. V. Dzhorbenadze has conducted more than 80 scientific works, most of them have been devoted to the study of important problems of pathology: human and animal tumors, the pathology of infectious diseases, ulcerous diseases, disruptions of metabolism, pathology of fetuses and the newborn, alloplasy of the large vessels, teratology, etc. He was the first to obtain experimental exanthematic fever in Zakavkaz'ye hamsters and guinea pigs under conditions of experimental scurvy. A. V. Dzhorbenadze is the author of the monograph "Materials on the Study of Exanthematic Fever."

Arkadiy Vissarionovich is a splendid pedagog and lecturer, engages in considerable dissection work, and is chief pathological anatomist of Tbilisi.

Arkadiy Vissarionovich has prepared two doctors, eight candidates of medical sciences, and more than 100 dissectors. Many physicians take advantage of the consultative aid of Arkadiy Vissarionovich in conducting their scientific research.

A. V. Dzhorbenadze has been a member of the Communist Party of the Soviet Union since 1952.

He engages in considerable organizational and social work, being deputy chairman of the Georgian Scientific Society of Pathological Anatomists, an honorary member of Tbilisi Scientific Society of Forensic Medical Experts and Criminologists, a member of the Scientific Medical Council of the Ministry of Health of Georgia, etc.

The fruitful work of A. V. Dzherbenadze is highly esteemed by the government. He has been rewarded with the order of Lenin, medals of the USSR, and Honorary Certificates of the Republic. Arkady Vissarionovich enjoys great respect and authority.

The Georgian Scientific Medical Society of Pathological Anatomists, co-workers of the chairs of pathological anatomy of Tbilisi Medical Institute and Tbilisi Institute for the Advanced Training of Physicians warmly congratulate dear Arkady Vissarionovich on his glorious anniversary, wishing him good health for long years and further creative successes.

\*-\*

The editorial board of Arkhiv Patologii and the Board of Directors of the All-Union Society of Pathological Anatomists congratulate Arkady Vissarionovich on his sixtieth birthday and wish him many years of life, good health, and creative successes.

YAKOV PAVLOVICH FRUMKIN  
(On His Sixtieth Birthday)

[Following is a translation of an article in the Russian language periodical Zhurnal Nevropatologii i Psichiatrii imeni S. S. Korsakova (Journal of Neuropathology and Psychiatry imeni S. S. Korsakov), Moscow, Vol. 32, No 3, 1962, p 1431.]

In August 1962, Head of the Chair of Psychiatry of Kiev Medical Institute imeni A. A. Bogomolets, Professor Yakov Pavlovich Frumkin had his sixtieth birthday and completed 38 years of medical, scientific pedagogical, and social activity.

After finishing at the medical faculty of the First Moscow State University, Yakov Pavlovich worked in the women's psychiatric clinic in Moscow, first as intern and then as assistant to P. B. Gannushkin. From 1932 on he was head of the chair of psychiatry at Kiev Medical Institute and supervisor of the psychiatric clinic of Kiev Psycho-neurological Institute. Here he has developed considerable scientific research work. His students have defended 22 candidates dissertations; he has prepared four doctors of medical sciences. Three of his students are heading chairs of psychiatry.

Professor Ya. P. Frumkin has written 102 scientific works, including three monographs. In his scientific activity he has realized a synthesis of clinical observation and experimental laboratory investigations. A large group of his works is devoted to epilepsy, its diagnosis and treatment, and its classification. These materials were generalized in his doctoral dissertation (1940). Another group of works was devoted to the diagnosis of mental diseases -- schizophrenia, psychopathy, symptomatic psychoses, vascular disorders of the brain, etc. In Ya. P. Frumkin's monograph on the differential diagnosis of mental diseases is reflected the vast clinical experience of the author, and a fine and profound development of problems of diagnosis. A group of his works is devoted to electroencephalographic investigations in mental diseases -- epilepsy, manic-depressive psychosis, schizophrenia, etc.

Professor Ya. P. Frumkin was one of the first in the Ukrainian SSR to introduce electroencephalography into the study of psychoses. A number of his works are devoted to the therapy of mental diseases -- original methods of treating schizophrenia, epilepsy, and other

diseases have been introduced into psychiatric practice. The theme of a group of works is problems of the history of psychiatry, its theory, methodology, and teaching.

Ya. P. Frumkin's monograph "Psychiatric Terminology" presents a systematization of psychiatric terms and concepts. This is an extremely original work, the only one of its kind in Soviet psychiatry.

Ya. P. Frumkin's associates and students have published about 300 scientific works on psychiatry under his supervision. A number of the works are included in three collections of works of the chair of psychiatry, published under his editorship.

Ya. P. Frumkin's new monograph, "Training Manual of Psychiatr.," will appear in the near future.

The great erudition of the clinician, the talent of the teacher, and the fine diagnostic mastery of Yakov Pavlovich attract students and physicians to his lectures and clinical analyses.

A member of the Communist Party of the Soviet Union since 1942, Ya. P. Frumkin combines his scientific research and medical pedagogical activity with active social work. He is a member of the Board of Directors of the All-Union Scientific Society of Neuro-pathologists and Psychiatrists, a member of the Board of Directors of the Ukrainian and Kiev City Scientific Societies of Neuropathologists and Psychiatrists, and a member of the Psychoneurological Commission of the Scientific Council, Ministry of Health Ukrainian SSR.

Let us congratulate Yakov Pavlovich on his glorious anniversary and wish him health, long years of life, and active creative fruitful work for the welfare of Soviet public health.

— —

SEMEON FEDOROVICH KAL'FA  
(On His Seventieth Birthday)

Following is a translation of an article in a Russian language periodical Oftalmologicheskiy Zhurnal (Ophthalmological Journal), Odessa No. 2, 1972, pp. 316-319.

On 13 March 1972, Head of the Chair of Eye Diseases of Odessa State Medical Institute (meni M. I. Skoryay), Doctor of Medical Sciences, Professor Semen Fedorovich Kal'fa on his seventieth birthday, has completed 40 years of scientific, pedagogical, and social activity.

Professor S. F. Kal'fa finished the medical faculty of Lvovs'kiy University in 1937 and since then has worked in the chair of eye diseases of Novgorod University and then Odessa Medical Institute, first in the role of tutor, then as assistant and lecturer, and from 1956 to July 1962 as chairman of Professor.

During the Second World War Professor S. F. Kal'fa served in the ranks of the Teachers' Institute, a branch of Odessa Medical Institute in Odessa Medical Institute, first in the role of chairman of the chair and since 1955 as head of the chair of eye diseases.

Professor S. F. Kal'fa worked for 10 years with the author of this article, V. P. Filatov, being one of his closest students and close friends. He has taken active part in the creation of the Burnashev Institute of Eye Diseases (meni Academician V. P. Filatova) in the post of deputy director of the Institute for the scientific section after the founding of the Institute in 1952. Even now he is maintaining the basic traditions of the school of Academician V. P. Filatov and is junior in its scientific principles.

Professor S. F. Kal'fa is one of the most famous ophthalmologists. He is the author of more than 150 articles, and is one of the scientist that beyond the boundaries of our country.

Professor S. F. Kal'fa has devoted his scientific activity to the basic problems of ophthalmology, the fight against diseases relating to blindness.

That is why most of his scientific works are related to problems of the study of glaucoma, a disease which is the leading cause of blindness. He has introduced a new contribution to the problem—the theory of tonometry, one of the best methods of early diagnosis of glaucoma, which has received wide circulation throughout the world.

practice. Professor S. V. Kal'fa has described the reflex regulating the intraocular pressure, which has permitted an explanation of the mechanism of conservation of the physiological level of the latter. He is the creator of the neurovascular theory of glaucoma pathogenesis, which he described as early as 1928, and, finally, he is the author of numerous works in the field of the clinic of glaucoma. Professor S. F. Kal'fa's doctoral dissertation and chapters in a multivolume handbook on eye diseases are also devoted to glaucoma.

Together with B. S. Brodskiy, Professor S. F. Kal'fa has proposed a permanent magnet for extracting magnetic foreign bodies from the eye. This magnet has received wide clinical circulation.

S. F. Kal'fa is currently paying great attention to problems of tonography and the creation of applanation photography.

The work of Professor S. F. Kal'fa has also been devoted to the transplantation of the corneal membrane in disabled veterans of World War Two, the treatment of recurrent erosion, the fight against trachoma, and other problems of ophthalmology.

Being a brilliant clinician and eye surgeon, he generously shares his knowledge and experience with eye patients, and his invariable tact and consideration to them has surrounded his name with an aura of profound confidence and respect.

A splendid lecturer and pedagog, an erudite oculist, Professor S. F. Kal'fa gives clear, interesting lectures, sharing with his listeners the newest achievements of modern science.

In addition to this scientific pedagogical work, Professor S. F. Kal'fa takes active part in social life. For many years he has been a consultant to the Hospital for Disabled Veterans of the Second World War; he is chief oculist of the oblast. In this post he participated actively in the organization of the fight against the great outbreak of trachoma during the postwar years, in which this disease was entirely liquidated.

S. F. Kal'fa is aiding in increasing the qualification of practical physicians without taking them away from their place of work, and thereby is greatly aiding the public health agencies.

Professor S. F. Kal'fa is chairman of the Odessa oblast Scientific Society of Eye Doctors, as well as deputy editor of Oftal'mologicheskii Zhurnal.

It would be difficult to characterize in a few words all the many-faceted activity of our Hero of the Day, one of the greatest scientists and popular ophthalmologists of our land.

## ANNIVERSARY OF A SCIENTIST

[Following is a translation of an article by reporter D. Maksumov in the Russian language newspaper Pravda Vostoka (Truth of the East), Tashkent, 20 September 1958.]

The medical community of the Republic has marked the sixtieth birthday and thirty-fifth anniversary of scientific, pedagogical, medical, and social activity of Honored Physician of Uzbek SSR, Candidate of Medical Sciences, docent of Tashkent Medical Institute, Boris Nikolayevich Kalmykov.

The assembly hall of the institute was overflowing. The report of the Hero of the Day on the topic: "Frequency of Individual Localizations of Cancer of the Stomach According to the Roentgenological Method of Investigation" was heard with great attention. In it the scientist presented the experience of 15 years of medical activity as a roentgenologist.

Those who spoke at the jubilee session, Acting Head of the Institute, docent S. A. Dalimov, chief radiologist of the Ministry of Health of the Republic G. S. Ikerzhev, Corresponding Member of the Academy of Sciences Uzbek SSR, Professor N. I. Ismailov, Senior Scientist of Uzbek SSR, Professor L. D. Vassilenko, Honored Scientist of the Republic, Professor K. G. Titov, Honored Scientist of Uzbek SSR, Professor I. G. Gasparyan, Professor S. A. Gurler, and others warmly congratulated the Hero of the Day.

B. N. Kalmykov has traveled the long road of life from X-ray technician to a great specialist. He is the author of 45 scientific works, which have been devoted to X-ray diagnosis and X-ray therapy. For many years the scientist has been continual consultant of the Central Railroad Hospital, the Republican Oncological Dispensary, and the Central Hospital of the Ministry of Health Uzbek SSR.

Docent B. N. Kalmykov is an experienced pedagog, a sensible, considerate physician; he has always been characterized by modesty.

Honored Physician of Uzbek SSR, M. N. Kukbergina received numerous letters and congratulatory telegrams addressed to the Hero of the Day from various cities of the Soviet Union.

## HONORING A SENIOR SCIENTIST OF LATVIA

(Following is a translation of an article in the Russian language newspaper Sovetskaya Latviya (Soviet Latvia), Riga, 19 September (2, p 2.)

On 18 September the great hall of the Palace of Science was festively decorated. On the stage -- much greenery. A gold printed figure "90." Here were assembled scientists and representatives of culture, literature, and art, representatives of the Party, Soviet, Trade Union, and Komsomol organizations, scientific research institutions of Moscow, Leningrad, Lithuania and Estonia, higher educational institutions of our republic, students, industrial inventors, and Baltic military men.

First Secretary of the Central Party Committee of Latvia, A. Ya. Pei'she, opened the festive session, dedicated to the honor of the elder scientist of the Republic, in the name of the Central Committee of the Latvian Communist Party, the Presidium of the Supreme Council and Council of Ministers of the Republic, and the Presidium of the Academy of Sciences Latvian SSR. In his brief introductory remarks he stated:

"Today we have assembled to honor one of the eminent Latvian scientists and social workers, Hero of Socialist Labor, Academician Professor Avgust Martynovich Kirkhenshteyn in connection with his ninetieth birthday and sixtieth anniversary of scientific-pedagogical and social-political activity. The Hero of the Day has devoted many years of his life to science. He has trained hundreds of specialists and researchers, who are successfully putting his discoveries into practice. Not only the workers of Latvia, but also all the Soviet people know A. Kirkhenshteyn as an outstanding scientist and social worker. He is the author of more than 1200 scientific, scientific-popular works, articles, pamphlets, and books.

When the workers of Latvia, under the guidance of the Communist Party, took the power into their own hands in 1940, the revolutionary forces of the Republic entrusted the venerable Professor with the responsible post of Chief of the Peoples Government, since he had for all his life kept abreast with the working people and protected their interests. A. Kirkhenshteyn headed the delegation of representatives of our people sent to Moscow with the request that Latvia be brought into the seven brother peoples of the Soviet Union.

After Soviet power had been proclaimed in Latvia, A. Kirkhenshteyn was elected Chairman of the Presidium of the Supreme Council of the Republic. He successfully combined his government activity with great scientific and pedagogical work. During the years of the Second World War, Avgust Martynovich gave all his energy to the task of victory over Hitler's aggressors. During the postwar years he worked tirelessly for the recovery of the national economy of the Republic. His many-sided activity earned the love and respect of the Latvian people. The Communist Party and Soviet Government highly esteem the merits of A. M. Kirkhenshteyn. He has been awarded the title Hero of Socialist Labor and rewarded with six orders of Lenin and three orders of the Workers' Red Flag. For his services in the development of Soviet science and his many years of fruitful social activity, in connection with his ninetieth birthday, Avgust Martynovich Kirkhenshteyn has been awarded the order of the Workers' Red Flag by ukase of the Presidium of the Supreme Council USSR.

In conclusion, A. Ya. Pel'she wished the Hero of the Day good health and further fruitful activity for the welfare of the Soviet people.

Another speech was given by Academician of the Academy of Sciences Latvian SSR, A. A. Shmit, who told about the life and scientific activity of the Hero of the Day. He noted that A. M. Kirkhenshteyn's labors have been so extensive that they do not fit within the framework of one branch of science. Beginning his working activity as a veterinary physician and microbiologist, he traveled the long road of life, achieving significant heights in science. We know him as an outstanding microbiologist, an eminent investigator in the field of the morphology of microorganisms and viruses. Avgust Martynovich has paid great attention in his scientific activity to problems of strengthening the health of the Soviet people. The Hero of the Day has rendered great services in the creation of the Academy of Sciences of our Republic. Since 1946 he has been a member of the Presidium of the academy, its Vice-President, and for long years has headed the Institute of Microbiology.

The works of A. Kirkhenshteyn on problems of infection and immunity are considerable. He has created a school of microbiologists. In his scientific activity he has persistently propagandized the significance of full-value nutrition and especially of vitamins in protecting the organism from infectious diseases.

Secretary of the Presidium of the Supreme Council of the Republic, K. P. Gaylis read a ukase awarding Professor A. M. Kirkhenshteyn the order of the Workers' Red Flag. To the accompaniment of hearty applause by those assembled in the hall, Chairman of the Presidium of the Supreme Council Latvian SSR, Ya. E. Kalnberzin presented the Hero of the Day with the high government decoration. Then comrade Kalnberzin read a greeting to A. M. Kirkhenshteyn from the Central Committee of the Communist Party of Latvia, the Presidium of the Supreme Council, and the Council of Ministers of the Republic.

A speech was presented by Chairman of the Presidium of the

Supreme Council Lithuanian SSR, Yu. I. Laletakis. He emphasized that Avgust Martynovich is an eminent government and social worker. During the first years after the restoration of Soviet power in Latvia, he promoted the rallying of the vanguard of the Latvian intelligencia around the Communist Party. Then comrade Palotskis read a greeting to the Hero of the Day from the Central Committee of the Communist Party of Lithuania, the Presidium of the Supreme Council, and the Council of Ministers of the Republic.

In the name of the Riga city Party committee and the Executive Committee of the Council of Workers Deputies, the Hero of the Day was cordially greeted by Chairman of the City Executive Committee, Ya. P. Pakaln, and in the name of the Presidium of the Academy of Sciences of the Republic -- by Vice-President of the Academy P. I. Valeskaln; for the Department of Biological Sciences, Academy of Sciences USSR -- Corresponding Member of the Academy N. D. Yerusalimskiy, for the Institute of Microbiology, Academy of Sciences USSR -- Deputy Director of this institute G. K. Skryabin; for the Republican Council of Trade Unions and the Committee of the Trade Union of Workers of Education, High School, and Scientific Institutions -- Chairman of the Latvian Council of Trade Unions V. A. Blyum; for the Ministry of Culture of the Republic -- Minister V. I. Kaupuzh; for the Ministry of Health Latvian SSR -- Deputy Minister V. V. Kanep; for the Central Committee of Lenin's Young Communist League of Latvia -- Secretary of the Central Committee A. R. Bikshe; for the Delegation of Young Leninists, Committee of the Council of Ministers of the Republic on the Coordination of Scientific Research Work -- Chairman of this committee M. L. Raman; for the All-Union Scientific Research Institute of Agricultural Microbiology -- V. A. Alekseyev; for the Union of Soviet Writers of Latvia -- Fritsis Rokpelnis; for the Agricultural Academy of Estonian SSR -- Professor E. A. Rau; for the Collective of Professors and Students of Latvian State University imeni P. Stachki -- Pro-rector V. O. Miller; for the Institute of Microbiology and the Latvian Department of the All-Union Society of Microbiologists -- Director of the institute R. A. Kukayne.

The Hero of the Day was also warmly greeted by representatives of the collective of the State Opera and Ballet theatre of Latvian SSR, the Academic Drama Theatre of Latvian SSR, the Council of the National Economy of the Republic, the Art Theatre imeni Ya. Raynis, the Latvian Agricultural Academy, the Riga Theatre of Russian Drama, students of Mazaalatsa High School, the youth theatre imeni Lenin Komsomol, the representatives of the Baltic Military District, and the Red Flag Baltic Fleet and other collectives.

Many greetings from social organizations, collectives of scientific research institutions, scientists, his students, enterprises, and educational institutions arrived addressed to the Hero of the Day. These greetings were presented to the Academician by Secretary of the Academy of Sciences of the Republic V. P. Samson, to the accompaniment of prolonged applause by those present.

On the same evening, many greetings were delivered to the Hero of the Day, and he was presented with many valuable gifts and flowers.

In conclusion, Avgust Martynovich Kirkhenshteyn gave an address, warmly received by those assembled. He sincerely thanked the representatives of the community for honoring him. The Academician assured those assembled that in the future he would give all his strength to the task of serving the Soviet people, Communist Party, leading the Soviet people into a radiant tomorrow.

Present at the same meeting, dedicated to the honor of the Hero of the Day, were Secretaries of the Central Committee of the Communist Party of Latvia, M. P. Gribkov, A. E. Voss, Deputy Chairman of the Council of Ministers of the Republic M. Ya. Pludon, National Author of Latvia, Vilis Latais, and guests from Moscow, Leningrad, Lithuania and Estonia.

The honoring of Academician A. M. Kirkhenshteyn has been a great event in the cultural life of the Republic.

\*\*\*

On 18 September an anniversary scientific session dedicated to the microbiological and medical researches of A. M. Kirkhenshteyn was held in the Academy of Sciences of the Republic. Director of the Institute of Microbiology of the Academy of Sciences of the Republic, R. A. Kukayne and Candidate of Technical Sciences, I. V. Skerd presented reports at the session. They talked about the great contribution that the elder Latvian Academician has introduced into the development of modern science.

V. I. KONSTANTINOV  
(On His 70th Birthday)

[Following is a translation of an article in the Russian language periodical *Akusherstvo i Ginekologiya* (Obstetrics and Gynecology), Moscow, No 5, 1962, p 120.]

Vladimir Ivanovich Konstantinov completed the Medical Faculty of Khar'kov University in 1918. From 1919 to 1921 he was a military physician.

The scientific and pedagogical activity of V. I. Konstantinov began in 1921, at the Chair of Obstetrics and Gynecology of Khar'kov Medical Institute, where he worked until 1935, first as an assistant, then as docent. In 1935 he received the degree of Candidate of Medical Sciences and transferred to the Chair of Obstetrics and Gynecology of the Second Khar'kov Medical Institute. In 1941 V. I. Konstantinov worked in Frunze as Docent of the Chair of Obstetrics and Gynecology of Kirgiz Medical Institute. In 1943 he was called up to the Soviet Army and named Chief Gynecologist of the Voronezh, and then the First Ukrainian fronts.

After the Second World War was over, V. I. Konstantinov began to work in Khar'kov Scientific Research Institute of Maternity and Child Protection imeni N. K. Krupskaya, first in the post of Head of the Division of Obstetrics and Gynecology, and from 1952 until the present -- as Deputy Director of the Institute for the Scientific Section.

Vladimir Ivanovich has taken and is taking active part in the development of maternity and child protection in our country and has introduced his own great creative contribution to it.

He has written 44 scientific works, 14 textbooks, and over 200 additional articles. Under his supervision, his students and associates have completed 92 scientific works, elucidating problems of the pathogenesis and treatment of inflammatory diseases, the pathology of pregnancy, disorders of the menstrual function, etc.

V. I. Konstantinov's Doctoral Dissertation, "The Basic Stages of Soviet Obstetrics," is of great interest.

As Deputy Director of the Institute for the Scientific Section, Vladimir Ivanovich has greatly promoted the development of the scientific activity of the institute, both in the field of obstetrics and gynecology, and in the field of pediatrics.

Professor V. I. Konstantinov is a member of the Presidium

[Commission or Problems of Obstetrics and Gynecology of the Academy of Medical Sciences USSR, and has twice been elected Deputy of the People's Council of Khar'kov. He is currently Deputy Chairman of Khar'kov Scientific Society of Obstetricians and Gynecologists, a member of the Board of Directors of the All-Union Society of Obstetricians and Gynecologists, and Deputy Chairman of the Khar'kovskaya Oblast Council of Parturifacients.

The work of Vladimir Ivanovich is highly esteemed by the government. He has been awarded the Orders of Lenin, the Red Star, and the Patriotic War, Second Degree.

PROFESSOR LEONID FEDOROVICH LARIONOV  
(On His 60th Birthday)

[Following is a translation of an article in the Russian language periodical *Voprosy Onkologii* (Problems of Oncology), Leningrad, Vol 8, No 5, 1962, pp 124-125.]

On 2 August 1962, the great Soviet oncologist, experimenter, and clinician, laureate of the state prize, Corresponding Member of the Academy of Medical Sciences USSR, Professor L. F. Larionov completed 60 years of life and 35 years of medical, pedagogical, and scientific research activity.

L. F. Larionov was born into the family of a teacher in the city of Tobol'sk. He received his education in the Tobol'sk high-school and Tyumen' Practical School, after the completion of which in 1920, he entered the Medical Faculty of Tomsk State University.

From his student years, his attention was attracted to malignant tumors, to the study of which he has devoted his entire life. Working first as a laboratory technician at the Chair of Pathological Physiology of Tomsk State University under Professor A. D. Timofeyevskiy, and after finishing at the university, as an assistant at this same chair, L. F. Larionov conducted research in the field of the study of experimental carcinogenesis. The first work of L. F. Larionov, "Data on Experimental Cancer," published in 1926, attracted the attention of the well-known Leningrad pathologist G. V. Shor, who invited him to work in, at that time, the only laboratory in the country for the experimental study of cancer, organized at the Central Roentgenological, Radiological, and Cancer Institute. In this laboratory L. F. Larionov successively occupied the posts of graduate student, senior scientist, and from 1937 on headed it and reorganized it into an experimental cancer division.

In 14 years of continuous work in the Experimental Cancer Division, L. F. Larionov published more than 30 scientific works, devoted to various problems of experimental oncology, and successfully defended candidate's and doctoral dissertations. He combined his work in the Experimental Cancer Division with investigations that he conducted in the Laboratory of Industrial Toxicology of Leningrad Institute of Labor Hygiene and Occupational Diseases, as well as with pedagogical activity at the Chair of Pathological Physiology of the First Leningrad Medical Institute imeni Academician I. P. Pavlov, where he successively occupied the posts of assistant, docent, and acting head of the chair.

In 1940 L. F. Larionov was elected to the post of Head of the Chair of Pathological Physiology of Minsk Medical Institute and was confirmed in the title of Professor of this chair. Being unable to be evacuated from Minsk in time, L. F. Larionov found himself on occupied territory.

During these serious years for our country, L. F. Larionov rendered medical aid to the population and partisans of the occupied regions of Belorussia.

In 1945 L. F. Larionov, at the command of the Peoples' Commissar of Public Health of the USSR, returned to work in Leningrad, where he organized the first laboratory in the country for the experimental therapy of cancer in the Institute of Oncology, Academy of Medical Sciences USSR. This period of his creativity was devoted to the creation of effective antitumoral preparations, as well as methods for their rational use in the clinic.

In 1948 L. F. Larionov advanced the hypothesis that an increase in the antitumoral activity and a decrease in the toxicity of alkylating compounds can be achieved by adding cytotoxic groups to natural metabolites (amino acids, components of nucleotides, vitamins, etc.), which take part in the metabolic processes of tumors.

In 1951 L. F. Larionov was awarded the state prize for developing a new method of treating lymphogramulomatosis and leukemia with the preparations embichin and neoembichin and their introduction into the public health practice of the country. In this same year L. F. Larionov was invited to work in the Institute of Experimental and Clinical Oncology of the Academy of Medical Sciences USSR, where he organized the Laboratory of Experimental Chemotherapy of Tumors. His creative collaboration with the leading chemists of the country, whom L. F. Larionov interested in the direction of his investigations, permitted the production of a number of effective antitumoral preparations, which have found clinical use.

The works along this line are not only of theoretical significance, but are also closely related to the solution of the most important tasks set before Soviet public health in the Party Program.

Through all the scientific creativity of Professor L. F. Larionov, like a red thread, runs a striving to evaluate the facts obtained experimentally from the point of view of their practical significance.

L. F. Larionov has repeatedly represented our country's science abroad, taking part in the work of international conferences, symposia, and congresses. In 1958 he was elected as one of the foreign members of the Royal Medical Society in London. Since 1959 he has worked as a consultant on the UNESCO program "Cellular Biology and Radiobiology," as well as a consultant on the chemotherapy of cancer for the World Health Organization. L. F. Larionov is a member of the Editorial Boards of the internal journals Biochemical Pharmacology and Chemotherapy.

L. F. Larionov also engages in great scientific organizational work in our country. He is a member of the Problem Commission on Malignant Tumors of the Academy of Medical Sciences USSR, Corresponding Secretary of the Commission for the Coordination of Scientific Research in the Field of the Study of the Cancer Problem, and a member of the

[ Pharmacological Committee of the Academy of Medical Sciences USSR. ]

L. F. Larionov has published more than 140 scientific works, including three monographs and four chapters in large handbooks on oncology. More than 150 scientific works have been completed under his supervision, including 20 Candidate's and Doctoral Dissertations. L. F. Larionov's scientific creativity has enriched Soviet science with works of great significance, both theoretical and practical in character. He has conducted profound investigations of the problem of pathogenesis of malignant tumors, crowned by the creation of an adaptation-cystrophic theory of the appearance of cancer, worked out problems of the biological action of penetrating radiation, and, finally, for the last 17 years his creativity has been devoted to problems of the chemotherapy of cancer, and in this field of oncology and pharmacology he is the leading specialist of the Soviet Union.

The work of L. F. Larionov in the field of cancer chemotherapy has received international recognition.

For a number of years Professor L. F. Larionov has been a deputy of the Sverzhinsky Rayon Council of Workers' Deputies of the city of Moscow. L. F. Larionov has been awarded the Order of the Workers' Red Flag.

On the day of his glorious anniversary, his innumerable students and associates wish their dear teacher good spirits and health and further creative successes for the good of our wonderful country.

Students and Associates

ANDREY VLADIMIROVICH LEBEDINSKY  
(On His 60th Birthday)

[Following is a translation of an article in the Russian language periodical Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenova (Physiological Journal of the USSR imeni I. M. Sechenov), Moscow, Vol 48, No 9, 1962, pp 1133-1135.]

In May 1962 Professor Andrey Vladimirovich Lebedinskiy completed 60 years of life and 40 years of scientific activity.

A. V. Lebedinskiy belongs to the generation of physiologists that was formed after the Great October Socialist Revolution. He began his scientific research work during the prime of I. P. Pavlov, the last years of life of N. Ye. Vvedenskiy, during the youthful years of L. A. Orbel', A. A. Ukhtomskiy, K. M. Bykov, Yu. V. Fol'bort, F. S. Kupalov, N. P. Rezvyakov, and other eminent physiologists of our country.

A. V. Lebedinskiy began his first experimental work in the laboratory of L. A. Orbel', being a student in the fourth course of the Military Medical Academy, which he completed in 1924.

In the scientific atmosphere of the '20's, full of creative researches, the biophysical method of investigating biological phenomena, presented at that time by Academician F. P. Lazarev, unfolded as one of the important directions of natural science. A. V. Lebedinskiy utilized precisely this pathway in his attempts to analyze the phenomenon of the trophic influence of the sympathetic innervation on the skeletal musculature. The concept of a "nervous trophical system," revived by I. P. Pavlov, who gave it its modern meaning, received one of the possible interpretations in the work of L. A. Orbel'. For a long time it also attracted the attention of A. V. Lebedinskiy.

In his work on the biophysical analysis of the trophic influence of the sympathetic innervation, he proved to be one of the pioneers of the use of electronics in physiology, using amplifying circuits and the most modern generator circuits of the time to measure the electrical parameters of the skeletal musculature. Debating with A. V. Hill, he made a thorough study of the perialeletric process in the skeletal musculature, included in an alternating-current circuit. Later, in works conducted jointly with N. I. Mikhel'son, A. V. Lebedinskiy developed quantitative methods of evaluating the viscosity of the skeletal

mucculature, attempting to make a model study of the elastic-viscoelastic properties of the skeletal muscle in electric quantities. Together with A. M. Tverdynskiy he was the first to attempt a quantitative determination of the viscosity of the vascular wall, for which he utilized the phenomenon of relaxation.

One of the great directions of the work of A. V. Lebedinskiy and his associates is the study of the physiology of the sensory organs. He has worked in the field of the physiology of taste, the analyzer of the position and motion of the body in space, and especially in the field of the physiology of sight. Together with L. F. Zagerul'ko and S. M. Dionesov, he discovered the existence of reciprocal interrelationships between the cone and rod apparatuses of the retina, showed the significance of the phenomenon in the process of adaptation of the eye to darkness, and discovered the role of the simple nervous system in perception. A. V. Lebedinskiy's Doctoral Dissertation contains experimental data demonstrating the vital role of the central nervous system in the process of adaptation of the eye, describes a new fact of lowering of the excitability of the cortical end of the optical analyzer in darkness. Later, in joint works with N. V. Zimkin and A. N. Bronshteyn, he disclosed the biological role of this phenomenon. During the course of these investigations, the phenomenon of electrical phosphene was explained -- it was found that it owes its origin to the action of electric current on the retina. It was also revealed that the drop in the electric excitability of the eye during a stay in darkness is due to a drop in excitability of the cortex of the large hemispheres. The works of A. V. Lebedinskiy and his associates, who revealed the weakening influence of the sympathetic innervation on the accommodation musculature, the vasodilatory influence of the fibers of the trigeminal nerve on the vessels of the ciliary tract, and a number of other investigations devoted to the study of regulation of the intraocular pressure, circulation, and the hematocephalic barrier, both from the nervous aspect, and from the aspect of endocrine mechanisms (T. K. Dzharak'yan) are of great significance both for physiology and for ophthalmology. In his latest works, an attempt is made at an electrical model study of the phenomena of perception. The mediation of acetylcholine and histamine during afferent irritation of the afferent nerve, was first detected in his laboratory.

Jointly with N. V. Zimkin, A. V. Lebedinskiy has conducted a number of experimental works studying the innervation of the pupil; in particular, they detected the parasympathetic fibers that go to the sphincter pupillae of a rabbit within the trigeminal nerve. In a joint work with N. V. Savvin, he described the reflex from the cornea to the sphincter pupillae of a cat, effected along the system of the trigeminal nerve. Together with I. A. Feymer, he proposed an original explanation of the origin of the elements of an electroretinogram, and in collaboration with clinical ophthalmologists he proposed an explanation for the characteristic variation of the ERG in glaucoma.

A. V. Lebedinskiy has participated in the study of the physiological effects under the action of hot fumigants/irritants.

Having begun his scientific activity in the school of I. A.

[Orbel', A. V. Lebedinskiy naturally attempted to use the evolutionary method to solve a number of problems posed before him. Thus, he and his associates conducted investigations of the evolution of the photoreceptor function. Together with N. M. Zimkin, he gave schemes of the evolution of the innervation mechanisms of the pupil, and in a number of other works he developed representations of the evolution of interrelationships between the animal and parasympathetic innervations.

A. V. Lebedinskiy, in collaboration with his associates, has conducted a number of investigations devoted to the study of the vegetative nervous system. In one of his early works, in collaboration with V. V. Strel'tsov, he detected the existence of tonotropic influences of the sympathetic innervation on the skeletal musculature. Together with I. S. Babchin, he studied the influence of irritation of the cerebellum on the cardiac activity and skin electrical potentials. A. V. Lebedinskiy investigated the vegetative effects arising during irritation of varicous parts of the skin of the large hemispheres in man, as well as in animals in the process of ontogenesis. Recently (1961) he and his associates presented the results of many years of investigations devoted to the study of the problem of the reaction of the vegetative nervous system to the influence of ionizing radiation.

A large series of experimental works of A. V. Lebedinskiy and his associates has been devoted to a study of the problem of the trophic function of the nervous system. Along this line he has revealed the role of special ganglia and their analogs in the craniocerebral nerves. Recently the significance of this innervation mechanism for guaranteeing a normal course of the processes of physiological regeneration has been revealed. A more detailed analysis of the phenomenon showed its relationship to the genetic, informational data of the cell - the nucleic acids. All this taken together has permitted a new approach to the solution of one of the oldest and so far insoluble problems of physiology.

Characteristic of all A. V. Lebedinskiy's scientific activity is constant attention to clinical interests. In this respect, we should mention his works (in collaboration with N. P. Bekhtereva), devoted to a physiological analysis of the phenomena arising during brain trauma, tumors of the cerebrum, and certain others; part of these can serve as a basis for the representation developed by the authors of the summation of various forms of the inhibiting process. Another section of A. V. Lebedinskiy's work directly related to the clinic, is the investigations of his and his co-workers', devoted to the analysis of the phenomena that arise during acute disruption of the venous circulation. He has demonstrated that in this case phenomena of reflex spasm of the vessels, leading to the appearance of hypoxic sections of the myocardium, disruption of the rhythm, and weakening of its contractive function outside the site of direct vascular injury, appear in the vascular system of the heart. The extracardiac influences (reflex and central) that cause an additional deterioration in the state of disrupted circulation, discovered by his associates (1960), are also of vital significance.

In addition to his experimental work, A. V. Lebedinskiy has always paid special attention to the pedagogical process and the training of young staff. He has written a course in normal physiology, in collaboration with A. G. Cinatinskij. Many doctoral and candidate's dissertations have been defended under his supervision. He is the co-author of several separate editions on problems of the trophic function of the nervous system (1945), the influence of ionizing radiation on the nervous system (1960), and works on the history of physiology.

In addition to his scientific work, A. V. Lebedinskiy engages in considerable scientific social work, being a member of the Board of Directors of the All-Union Society of Physiologists, Chairman of the Council on the Problem "Radiobiology" of the Academy of Sciences USSR. He participates actively in the work of the Society for the Dissemination of Political and Scientific Knowledge, and is a member of the Editorial Boards of a number of journals.

From 1955 to 1958, A. V. Lebedinskiy was a representative of the USSR in the Scientific Committee of the United Nations Organization on Atomic Radiation, has actively pursued the humane politics of our government, fighting for the cessation of nuclear testing and the prohibition of nuclear weapons.

A. V. Lebedinskiy is a member of the Academy of Medical Sciences USSR, and has been awarded the honorary title of Honored Scientist of the RSMR.

The government has a high opinion of the social, political, and scientific activity of Professor A. V. Lebedinskiy, having rewarded him with the Order of Lenin, the Order of the Red Flag, the Order of the Red Star, two orders of the Workers' Red Flag, and medals.

Let us congratulate dear Andrey Vladimirovich on his birthday and wish him great strength, good health, and further successes in his noble work.

Group of Comrades

ALEKSANDR FEDOROVICH LEPUKALN

[Following is a translation of an article in the Russian language periodical Voprosy Neirokhirurgii (Problems of Neurosurgery), Moscow, No 5, 1962, pp 62-63.]

On 25 October 1962, Head Hospital Surgeon of the Clinic of Riga Medical Institute, Honored Scientist of Latvian SSR, Professor A. F. Lepukaln completed 70 years of life and 44 years of medical, scientific, pedagogical, and social activity.

After completing his high school education, Aleksandr Fedorovich entered the Biological Department of the Physicomathematical Faculty of Peterburg University. In 1913 he transferred to the Medical Faculty of Yur'yev (now Tartu) University. In 1915-1916 he worked as a volunteer in the front-line bandaging detail on the western front. In September 1918, still before completing the university he voluntarily left for the front in the Civil War, where he discharged medical duties in the Ninth Red Army on the southern and northern Caucasus fronts. In 1921-1922, A. F. Lepukaln worked as a subassistant in the Surgical Clinic of Professor N. N. Burdenko at Voronezh University, from 1922 to 1927 as a district physician, heading hospitals in the Valuykiy district of Voronezhskaya guberniya. In 1927-1930 he was a graduate student in the Surgical Clinic of Yu. Yu. Dzhanelidze in Leningrad. From 1932 to 1946 he was First Assistant, and then Docent of the Faculty Surgical Clinic of N. N. Burdenko in Moscow. Being a student of the outstanding surgical schools of N. N. Burdenko and Yu. Yu. Dzhanelidze, Aleksandr Fedorovich carried on the traditions of these schools, heading the Chair of Hospital Surgery of Riga Medical Institute from 1946 on.

In Riga A. F. Lepukaln's talent as a scientist, clinician, pedagog, organizer, and social worker was broadly developed. The scientific activity of Aleksandr Fedorovich began during his work as a district physician, when he published a number of articles on problems of surgery, obstetric and surgical errors of the district physician, as well as general medical topics.

The scientific works of A. F. Lepukaln (there are more than 60 of them) are devoted to experimental and clinical investigations, problems of traumatology, the fight against surgical infection, etc. We should especially mention his numerous works on problems of traumatic shock (including his doctoral dissertation), the fight against anaerobic infection, trauma of the simple nervous system, etc.

As an old associate and student of Academician N. N. Burdenko,

A. F. Lepukaln was Secretary of the Shock Commission in the Scientific Medical Council of the Military-Sanitary Administration, headed by N. N. Burdenko.

Aleksandr Fedorovich instructs surgeons and neurosurgeons with love and great enthusiasm, actively assisting in the growth and development of young practical scientific staff. Under his guidance, nine candidate's dissertations have been completed. The co-workers of the clinic he heads have published more than 200 scientific works.

A. F. Lepukaln is a brilliant organizer. For 14 years he has been Chief Surgeon of Latvian SSR, and has greatly promoted the organization of surgical, oncological, and neurosurgical aid to the population of the republic. In 1946 he organized a neurosurgical department at the Nerve Clinic in Latvian SSR, which subsequently was reorganized into an independent department.

As a brilliant clinician and surgeon, Aleksandr Fedorovich combines the high qualities of a humanitarian, a sincere, sympathetic person, and has earned the love and profound respect of patients, comrades, and associates.

A. F. Lepukaln has repeatedly been elected and served as deputy of Riga City Council of Workers' Deputies. He has been a continuous chairman of the Republican Scientific Society of Surgeons, has been a member of the Board of Directors of the All-Union Societies of Surgeons, Neurosurgeons, and a member of the International Society of Surgeons, and has frequently reported at All-Union and other conferences of the surgeons of our country. Aleksandr Fedorovich is a member of the Editorial Councils of the Great Medical Encyclopedia, the journals Voprosy Neyrokhirurgii (Problems of Neurosurgery), Khirurgiya (Surgery), the Medical Abstract Journal, etc.

The Board of Directors of the All-Union Scientific Society of Neurosurgeons and the Editorial Board of the journal Voprosy Neyrokhirurgii cordially congratulate dear Aleksandr Fedorovich on his glorious anniversary and wish him further fruitful activity for the good of Soviet surgery.

PHYSICIAN, SCIENTIST, PEDAGOG  
On the 70th Birthday of M. Martsinkyavichyus

[Following is a translation of an article by I. Sklyntas,  
uskas, Docent, Honored Physician of Lithuanian SSR in  
the Russian language newspaper Sovetskaya Litva (Soviet  
Lithuania), Vil'nyus, 29 September 1962, p 4.]

The medical community of Soviet Lithuania today marks the 70th birthday of the well known physician, scientist, and social worker, Doctor of Medical Sciences, Professor Mikolas Martsinkyavichyus.

The path to knowledge was not easy for the son of a poor peasant. But, succeeding in overcoming all difficulties, M. Martsinkyavichyus in 1926 completed work at the Medical Faculty of Kaunas University and then worked as a physician in Rukiskis, Iliniuv, and Panevezhia.

The way to broad creative activity was not opened up before him until after the reinstatement of Soviet power in Lithuania. In the postwar years, M. Martsinkyavichyus actively participated in the reconstruction of Vil'nyus University as Dean of the Medical Faculty and organizer of the Chair of Propedeutica of Internal Diseases, which he is still heading. In 1948, M. Martsinkyavichyus defended his Candidate's Dissertation. On the basis of I. P. Pavlov's theory, he was the first in the republic to begin the use of sleep therapy in ulcerous diseases. He generalized the great experience accumulated in this technique in his Doctoral Dissertation, which he successfully defended in 1959. He has published a number of works on ulcerous diseases, investigations of the higher nervous activity, etc.

In his lectures Professor M. Martsinkyavichyus acquaints his students with the leading figures of Russian medicine -- S. P. Botkin, G. A. Zakhar'IN, I. M. Sechenov, I. P. Pavlov, etc., as well as with the best traditions of Russian medicine and the achievements of Russian and Soviet science. He believes his primary duty to be the imbueing of future doctors with the firm foundations of the ethics of the Soviet physician.

Professor M. Martsinkyavichyus constantly engages in great organizational and social work. With his participation, the Scientific Therapeutic Society was organized in Vil'nyus soon after the end of the war. M. Martsinkyavichyus is a member of the Scientific Council of the Medical Faculty of Vil'nyus University, the United Scientific Council of Kaunas Medical Institute, and the Scientific Council of the

Institute of Experimental Medicine, Academy of Sciences Lithuanian SSR. The chair headed by Professor Martsinkyavichus is engaging in great scientific work.

Professor M. Martsinkyavichus has been rewarded for his outstanding service in the development of medical science with the Order of the Workers' Red Flag, a medal "for Heroic Work in the Second World War," a honorary certificate from the presidium of the Supreme Council Lithuanian SSR, and he has been awarded the honorary title of Honored Physician of Lithuanian SSR.

The medical community of Lithuania warmly congratulates the hero of the day and wishes him long years of life, health, and new creative successes.

PROFESSOR VLADISLAV MELYANOVSKIY  
(At His 50th Year of Medical Activity)

(Following is a translation of an article in the Russian language periodical Vestnik Oftalmologii (Herald of Ophthalmology), Moscow, No 4, 1962, p 90.)

On 12 October 1961, at the Second All-Union Conference of Ophthalmologists in Tbilisi, the chief Polish ophthalmologist, Professor Vladislav Melyanovskiy, was elected honorary member of the All-Union Society of Ophthalmologists.

V. Melyanovskiy was born in Warsaw in 1888. In 1912 he completed work at the Medical Faculty of Kiev University. Returning to his home country in 1918, V. Melyanovskiy began to attend the Institute of Ophthalmology on a volunteer basis, and from 1921 to 1929 he worked in the Eye Clinic as Assistant to Professor K. Noishevskiy. In 1923 he defended a dissertation on the topic "The Problem of the Pathological Anatomy of Glaucoma," and received the title of Doctor of Medicine of Warsaw University. In 1926, presenting work on the pathological anatomy and clinic of eye changes in diseases of the kidneys, he received the title of Assistant Professor of Ophthalmology at Warsaw University. In 1934 V. Melyanovskiy was named Director of Warsaw Ophthalmological Institute imeni E. Lycobomirskiy. In 1945 he was elected Professor Extraordinary and rector of the Ophthalmological Clinic of Warsaw University, and since 1956 he has been Professor Ordinary of Warsaw Medical Academy.

Since 1936 V. Melyanovskiy has been Chairman of the Warsaw Ophthalmological Society, and since 1959 he has been Chairman of the Polish Ophthalmological Society. V. Melyanovskiy has published more than 160 scientific works, including five monographs and one textbook. He is currently preparing a number of new works for publication.

V. Melyanovskiy has written a number of works on problems of the pathogenesis and pathological anatomy of eye diseases. He has devoted 12 works to problems of glaucoma, including his doctoral dissertation. He has paid considerable attention to diseases of the vascular system of the eye. Considerable space among his works in this field is occupied by his investigation of changes in the retina and vascular envelope of the eye during nephritis and hypertension (1925). A number of V. Melyanovskiy's works have been devoted to trachoma, symptomatic ophthalmia, expulsive hemorrhage, secondary glaucoma, serious complications after operation for the extraction of cataract, etc.

A considerable number of his investigations pertain to the etiology, diagnosis, and therapy of eye diseases: in particular, he has published about 30 articles on problems of eye surgery; many reports pertain to tuberculosis, syphilis, and rheumatism of the eye. Among his numerous works on the influence of general diseases of the organism and nervous system on the eye, we should especially mention his monograph "The Eye and the Nervous System" (1956).

V. Melyanovskiy's contribution to ophthalmological optics is considerable. In addition to a number of articles, he has published the monograph "Ophthalmological Optics" (1950). His book "Hygiene and Prophylaxis of the Organ of Sight" (1936) is devoted to the social hygiene of the eye. V. Melyanovskiy's works on the history of ophthalmology make up the last group. There are no less than 15 of them, including two monographs: "The History of the Ophthalmological Institute imeni E. Lyubomirskiy (1823-1924)" (1948) and "Concise History of Polish Ophthalmology" (1948).

Among the original proposals of V. Melyanovskiy, the modification of the Langrange operation in glaucoma (the use of a conjunctival bridge), calculations of the optimum lighting during work, glasses to prevent detachment of the retina in cases of myopia, etc. stand out.

V. Melyanovskiy's merits are highly esteemed in many countries. Thus, as early as 1925 he was elected Member of the French Ophthalmological Society, in 1945 Member of the Ophthalmological Society of Great Britain. In 1936 he was elected an honorary member of the Czechoslovakian and Bulgarian Ophthalmological Societies.

V. Melyanovskiy has been a participant in almost all the international ophthalmological conferences, beginning with 1925, a participant in two All-Union Conferences of Ophthalmologists in the Soviet Union, as well as national conferences in other countries. In 1937 he was elected representative from Poland in the International Association for Combating Blindness. He is a member of the Editorial Board of the journals *Excerpta medica* (Ophthalmology, Section XII), (Amsterdam) and *Ophthalmic Literature* (London).

The Soviet Medical Society warmly congratulates Professor Vladislav Melyanovskiy on his important anniversary and wishes him many years of active creative life.

Ya. K. MUMINOV  
(On His 60th Birthday)

[Following is a translation of an article by the Uzbek Republican Society of Spa Therapists and Physiotherapists and the Collective of Scientists of Uzbek Scientific Research Institute of Spa Therapy and Physiotherapy imeni N. A. Semashko in the Russian language periodical Voprosy Kurortologii, Fizioterapii, i Lecheniia Fizicheskoy Kul'tury (Problems of Spa Treatment, Physiotherapy, and Therapeutic Physical Culture), Moscow, no 4, 1962, p 376.]

In February 1962, the medical community of Uzbekistan warmly saluted the 60th birthday and 5th year of medical, scientific pedagogical, and social activity of the Director of Uzbek Scientific Research Institute of Spa Therapy and Physiotherapy, Chairman of the Uzbek Society of Spa Therapists and Physiotherapists, honored scientist and technologist of Uzbek SSR, Candidate of Medical Sciences, Docent Yasut Karimabayevich Muminov.

A talented public health organizer, he has applied great initiative and energy to the improvement and development of public health in Uzbekistan. In 35 years of work on the public health front, Ya. K. Muminov has occupied a number of responsible posts: Head of the Oshieh Public Health Service, Deputy Peoples' Commissar and Peoples' Commissar of Public Health, Director of the Medical Institute, etc.

For the last 15 years, as Director of Uzbek Institute of Spa Therapy and Physiotherapy imeni N. A. Semashko, he has been expending all his efforts on the development of sanitary health resort and physiotherapeutic affairs in Uzbekistan. During these years the institute has discovered and studied a considerable number of mineral springs and climatic localities. At the initiative of Ya. K. Muminov, a new organizational form of medical institutions -- local balneological hospitals -- has been created on the basis of certain sources of mineral waters (Chardak, Tashkent mineral waters, Chilon, Dzhalyran-Kiana, Yuzhnyy Alaychik, Negorzasya, etc.), in which tens of thousands of patients are treated. Some of these balneological hospitals are gradually being converted into health resorts (Chardak, Tashkent mineral waters, Chilon).

Ya. K. Muminov is the author of 30 scientific works, devoted chiefly to the history and organization of health resort matters in Uzbekistan. He pays considerable attention to the training of

[qualified staff for health resort and physiotherapeutic institutions.]

During his entire life Ya. K. Muminov has harmoniously combined great organizational scientific activity with social and political work. He has been a member of the Communist Party of the Soviet Union since 1925, and has for a long time been a member of the Central Committee of the Communist Party of Uzbekistan and a deputy of the Supreme Council of Uzbek SSR. He is currently a deputy of the Tashkent City Council of Workers' Deputies, a member of the Board of Directors of the All-Union Society of Physiotherapists and Spa Therapists, and a member of the Central Scientific Health Resort Commission in the Central Health Resort Administration of the Trade Unions.

The fruitful activity of Ya. K. Muminov in the field of public health is highly esteemed by the Party and government. He has been rewarded with five orders, certificates of the Supreme Council of Uzbek SSR, and the title of Honored Physician of Uzbek SSR. In connection with his 60th birthday and 35th year of scientific pedagogical and social activity, Ya. K. Muminov has been awarded the honorary title of Honored Scientist and Technologist of Uzbek SSR.

Ya. K. Muminov has arrived at his 60th birthday in the prime of his creative forces. He is full of energy and daring, striving to continue his benevolent service of the people. Let us wish him many more years of health, inexhaustible energy, and fruitful creative activity.

I. A. PIONTKOVSKIY

(Following is a translation of an article by A. N. Gorodsov, N. D. Vinogradov, and Ye. M. Pasynkov in the Russian language periodical Voprosy Kurortologii, Fizioterapii, i Lechebnoy Fizicheskoy Kul'tury (Problems of Spa Treatment, Physiotherapy, and Therapeutic Physical Culture), Moscow, No 5, 1962, pp 468-469.)

The eminent Soviet specialist in the field of experimental physiotherapy, Professor Igor' Andreyevich Piontkovskiy has passed his 60th birthday.

I. A. Piontkovskiy was born in 1902 in Kazan'. In 1926 he completed the Medical Faculty of II Moscow University and became a graduate student, and then Assistant of the Chair of Physiotherapy of II Moscow Medical Institute. He received special training in morphology and experimental physiotherapy at the State Institute of Physiotherapy (GIF) under the supervision of Professor A. V. Rekhanov. His work as an assistant and docent of the Chairs of Pathophysiology of I and II Moscow Medical Institutes, under the supervision of Professors G. I. Sakharov and S. S. Khalatov, was a great help for his activity in the field of experimental physiotherapy.

For many years he was head of the Experimental Division of the Institute of Physiotherapy and worked at Moscow Oblast Institute of Physiotherapy and Physioprophylaxis (MOIP), and later was Head of the Chair of Pathological Physiology of Gor'kiy Medical Institute. Now Igor' Andreyevich is Head of the Laboratory of Neuroradiology of the Institute of Higher Nervous Activity and Neurophysiology, Academy of Sciences USSR.

I. A. Piontkovskiy is the author of more than 100 scientific works. A large number of scientific works and more than 30 dissertations have come from the laboratories under his supervision. The basic direction of his investigations is the study of the action of physical factors on physiological and pathological processes. He has demonstrated the stimulating influence of galvanic current on the process of regeneration in the peripheral nerves. These works have not yet lost their significance and are constantly cited. I. A. Piontkovskiy was one of the first in the USSR to begin to study the therapeutic action of an electrical UHF field, in particular the mechanism of its action on the inflammatory reaction. These investigations, generalized in a dissertation for the degree of Doctor of Medical Sciences, prompted

the wide utilization of this factor in the treatment of inflammatory diseases.

The study by I. A. Piontkovskiy and his associates of the influence of ultraviolet rays of various wavelengths on the reactivity of the skin, tissue metabolism, the appearance of biologically active substances in the skin, and the state of the higher nervous activity enabled him to formulate a number of important theories of the biological action of ultraviolet rays. An investigation of the mechanism of the action of various types of electromagnetic oscillations permitted him to considerably deepen the concept of the tissue selectivity in the action of physical agents.

I. A. Piontkovskiy has advanced an interesting theory on physical factors as stress agents; he considers the response reactions of the organism to them as protective-adaptation responses. The latest works of I. A. Piontkovskiy studying the action of ionizing radiations on the functions of the nervous system, in particular, the role of radiation trauma during the period of embryogenesis, are of great significance.

We should especially mention the works of Professor I. A. Piontkovskiy on the history of medicine -- monographs devoted to A. I. Iolunin, the first Russian professor of medicine, S. G. Zybelin, and articles on G. A. Zakhар'ин, I. M. Sechenov, d'Arsonval, M. Marat, etc.

In addition to his fruitful scientific activity, I. A. Piontkovskiy expends great efforts and attention on literary editing activity: he has participated in the editing of a number of collections, works of institutes and conferences, etc. He is currently a member of the Editorial Board of the journal Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya (Pathological Physiology and Experimental Therapy).

He also spends considerable time in pedagogical activity. His lectures, concise in form and profound in content, have always evoked great interest in his listeners. I. A. Piontkovskiy has frequently presented reports at international conferences (in 1956 in Hungary, in 1959 in Argentina, in 1960 in Denmark), as well as lectures before physicians of the countries of the Peoples' Democracies (Bulgaria, German Democratic Republic).

I. A. Piontkovskiy spends considerable time in social activity. For 15 years he was Secretary, and then Chairman of the Moscow Society of Physiotherapists. He is currently a member of the Board of Directors of the All-Union Society of Physiotherapists and Spa Therapists, a member of the Editorial Council of Medgiz (State Publishing House of Medical Literature), a member of the Commission of Experts of VAK (Higher Certification Commission), a member of the Medical Session of the Union of Soviet Societies for Friendship and Cultural Relations with Foreign Countries, etc.

The All-Union, All-Russian, and Moscow Scientific Societies of Physiotherapists and Spa Therapists congratulate Igor' Andreyevich on his 60th birthday and wish him health and further creative successes.

FEDOR YAKOVLEVICH ROZE  
(On His 60th Birthday)

[Following is a translation of an article from the Russian language periodical Zhurnal Nevropatologii i Psichiatrii imeni S. S. Korsakova (Journal of Neuropathology and Psychiatry imeni S. S. Korsakov), Moscow, Vol 62, No 9, 1962, p 1430.]

Fedor Yakovlevich Roze, Head of the Chair of Nervous Diseases of Dnepropetrovsk Medical Institute, has completed 60 years of life and 27 years of medical, scientific pedagogical, and social activity.

Fedor Yakovlevich was a worker in the mines of Krivorozh'ye from the age of 13; since 1927 he has been a member of the Communist Party of the Soviet Union.

In 1935 F. Ya. Roze graduated with honors from the medical faculty of Dnepropetrovsk Medical Institute and remained as a graduate student. In 1938 he was elected as an assistant of the Chair of Nervous Diseases of this institute. Then he worked as Deputy Director of the Educational and Scientific Section, later as Director of Dnepropetrovsk Institute for the Advanced Training of Physicians.

F. Ya. Roze was a participant in the Civil War, one of the active organizers of public health at Krivorozh'ye. During the years of the Second World War, he was stationed at the front; then after being wounded, he worked as Chief of the Neural Division of the District Military Hospital. He has four government decorations.

After demobilization from the army in January 1946, F. Ya. Roze again returned to work at Dnepropetrovsk Medical Institute, where he first was assistant, then docent, and in 1955 -- Head of the Chair of Nervous Diseases.

F. Ya. Roze is a highly qualified neuropathologist, and a thoughtful clinical physician. He is currently working on the problem of neurorheumatism. His Candidate's Dissertation "The Clinic of Gunshot Wounds of the Skull and Brain" is devoted to a study of certain problems of brain trauma. His Doctoral Dissertation "Clinical Forms of Injury of the Brain in Rheumatic Endomyocarditis" is both of theoretical and of practical significance for public health. Fedor Yakovlevich has completed more than 40 scientific works. Under his direction, the co-workers of the clinic, the division, and the neuropathologists of the city have published more than 130 articles in periodicals.

F. Ya. Roze is a good lecturer, an experienced pedagog, who

[ ] works tirelessly to improve his teaching methods. His lectures, as well as his clinical rounds, conducted on a high theoretical level, utilizing his personal practical experience, are willingly attended not only by students, but also by practicing neuropathologists.

In addition to his pedagogical and practical scientific activity, for 30 years F. Ya. Roze has taken an active part in the social and political life of the institute and city (Member of the Party Bureau of the Institute, Chairman of the Oblast Society of Neuropathologists and Psychiatrists, oblast neuropathologist) and enjoys well earned prestige and estime among the students and teachers, physicians, and population of Dnepropetrovskaya oblast.

Congratulating Fedor Yakovlevich on his glorious jubilee, let us wish him health and further creative successes for the welfare of Soviet science.

PROFESSOR OL'GA ISAAKOVNA SHERSHEVSKAYA  
(On Her 60th Birthday)

[Following is a translation of an article from the Russian language periodical Vestnik Oftal'mologii (Herald of Ophthalmology), Moscow, No 4, 1962, p 89.]

On 12 March 1962, Head of the Chair of Eye Diseases of Novkuznetsk Institute for the Advanced Training of Physicians, Professor, Doctor of Medical Sciences Ol'ga Isaakovna Shershevskaya, had her 60th birthday.

After graduating from the medical faculty of Tomsk University in 1925, O. I. Shershevskaya worked as an oculist for 12 years, and from 1937 on she was assistant of the Chair of Eye Diseases of Novosibirsk (now Novkuznetsk) Institute for the Advanced Training of Physicians. In 1940 she defended her Candidate's Dissertation, and in 1946 her Doctoral Dissertation. In 1947 she was elected to the post of Head of the Chair of Eye Diseases. O. I. Shershevskaya is a highly qualified clinical physician, and an experienced pedagog. She has completed more than 60 scientific works. O. I. Shershevskaya's basic works are devoted to problems of traumatism of the eyes, keratoplasty, connections of injuries to the organ of sight with general diseases of the organism. O. I. Shershevskaya's monographs "Transplantations of the Cornea with Fresh, Preserved, and Fixed Materials" (1940), "The Ocular Fundus in Battle Wounds of the Skull" (1950), "Industrial Traumatism of the Eye and its Prophylaxis" (1959), have received an extremely positive evaluation by ophthalmologists. Now she has prepared for print the monograph "Ocular Manifestations in Diseases of the Cardiovascular System."

O. I. Shershevskaya has proposed a number of diagnostic and therapeutic methods that have been adopted in ophthalmological practice. In particular, she has developed methods for the removal of complicated cataracts, subperiosteal anesthesia in operations on the lacrymal sac, the removal of intruding foreign bodies from the cornea; she has described a number of symptoms of diseases of the retina, has proposed the treatment of rheumatic uveitis with bee venom, etc.

O. I. Shershevskaya is devoting considerable strength and energy to the training of staffs of oculists. Under her direct and constant supervision, more than 1000 oculists have been trained for the oblasts, krais, and republics of Siberia, the Urals, and the Far East, five Candidate's Dissertations have been defended, and two Doctoral and four

Candidate's Dissertations have been completed. In the clinic she heads, modern methods of diagnosis and treatment of patients have been introduced. O. I. Shershevskaya is training the physicians of the clinic and hospital and those who attend her lecture series in complex therapeutic and surgical interventions.

For many years O. I. Shershevskaya has headed the Novkuznetsk Scientific Society of Eye Doctors. She is a deputy of the Kemerovo Oblast Council of Workers' Deputies. Professor O. I. Shershevskaya has been awarded the Order of Lenin and medals for her fruitful scientific, pedagogical, medical, and social activity.

ON THE 40TH ANNIVERSARY OF THE MEDICAL AND SCIENTIFIC ACTIVITY  
OF O. A. SHEYNBERG

[Following is a translation of an article by Professor V. K. Dobrovolskiy and Professor K. M. Smirnov in the Russian language periodical Voprosy Kurortologii, Fizioterapii, i Lechebnoy Fitocheskoy Kul'tury (Problems of Spa Treatment, Physiotherapy, and Therapeutic Physical Culture), Moscow, No 4, 1962, p 377.]

Senior scientist, Candidate of Medical Sciences Ovsey Abramovich Sheynberg has completed 40 years of scientific and medical activity in the field of therapeutic physical culture.

Since 1922 O. A. Sheynberg has been working as a physician specializing in physical culture in Vseobuch, in Soviet Armenia, and in the public health agencies, while for the last 30 years he has been a leading specialist on therapeutic physical culture at the health resorts of the Caucasian Mineral Waters. During these years he has performed great organizational and procedural work at Pyatigorsk Palaeological Institute and in numerous sanatoria. More than 200 physicians and 300 instructors in therapeutic physical culture have been trained under the supervision of O. A. Sheynberg. Fourteen scientific and practical conferences have been held with his closest participation. At his initiative, a division was organized in the All-Union Scientific-Medical Society on medical control and therapeutic physical culture, and he is serving as its chairman.

O. A. Sheynberg is the author of more than 50 scientific works, devoted to various problems of therapeutic physical culture. Now too he is successfully conducting active scientific work. O. A. Sheynberg was a participant in the Civil and Second World Wars. He was rewarded for his fruitful activity as a military physician with the Order of the Red Star and medals. Modest and responsive to the needs and problems of his comrades-in-work and his patients, Ovsey Abramovich evoked warm and friendly feelings in all who knew him. Let us wish the hero of the day long years of life, health, and further creative success!

LEONID NIKOLAEVICH SRETENSKIY  
(On His 60th Birthday)

(Following is a translation of an article in the Russian language periodical Prikladnaya Matematika i Mekhanika (Applied Mathematics and Mechanics), Department of Technical Sciences, Academy of Sciences USSR, Vol 26, 1962, pp 393-401.)

Leonid Nikolayevich Sretenskiy was born on 27 February 1902 in Moscow.

After completing public school, in 1919 he entered the physico-mathematical faculty of Moscow University. In the mathematical department of the faculty, Leonid Nikolayevich studied with such eminent mathematicians as D. F. Yegorov, N. N. Luzin, I. I. Privalov, and S. P. Finikov. In 1925 Leonid Nikolayevich became a graduate student at the Institute of Mathematics and Mechanics of the University, where he worked under the supervision of D. F. Yegorov. In 1929 he defended his Candidate's Dissertation "The Volterra Equation in the Plane of A Complex Variable" [9]; from 1929 to 1934, Leonid Nikolayevich taught mathematics and mechanics in various technical educational institutions of Moscow, and in 1934 he became a professor at Moscow University in the Chair of Hydrodynamics.

Since that time, the scientific and pedagogical activity of Leonid Nikolayevich has been inextricably involved with Moscow University.

In addition to teaching, Leonid Nikolayevich has at the same time been conducting great scientific work: from 1931 to 1941 in the theoretical division of the Central Aero-Hydrodynamic Institute (renamed N. Ye. Zhukovskiy, headed by S. A. Chaplygin), then in the Institute of Theoretical Geophysics, Academy of Sciences USSR, and since 1941 he has headed the laboratory of the Theory of Waves and Currents of the Maritime Hydrophysical Institute, Academy of Sciences USSR.

In 1936 Leonid Nikolayevich was awarded the degree of Doctor of Physicomathematical Sciences for his accumulation of works on the hydrodynamics of wave motions, without defending a dissertation.

In 1939, after a presentation by Academician S. A. Chaplygin, N. N. Luzin, F. P. Lazarev, and A. A. Krylov, Leonid Nikolayevich was elected corresponding member of the Academy of Sciences USSR.

Leonid Nikolayevich Sretenskiy is performing great scientific and social work: for a number of years he has been vice-president of the Moscow Mathematical Society, and has participated several times in the

[ publication of the journals Prikladnaya Matematika i Mekhanika (Applied Mathematics and Mechanics), Izvestiya AN SSSR (News of the Academy of Sciences USSR)(Geophysical Series), Vestnik Moskovskogo Universiteta (Herald of Moscow University)(Mathematical and Mechanical Series). Since 1959 Leonid Nikolayevich has been a member of the National Committee of the USSR on Theoretical and Applied Mechanics and the Committee on Regulations of the International Association of Physical Oceanography.

Leonid Nikolayevich spends considerable time in activity on the publication of works of Russian and Soviet scientists. He was a member of the Commission for the Publication of the Works of N. Ye. Zhukovskiy, S. A. Chaplygin, N. N. Luzin, and now is head of the Commission for the Publication of the Works of A. M. Lyapunov.

For his outstanding merit in the field of hydrodynamics and geophysics and his fruitful pedagogical activity, L. N. Sretenskiy has been awarded the Order of Lenin and the Order of the Workers' Red Banner.

The scientific creativity of L. N. Sretenskiy is extremely many-sided: he has written a number of works on hydrodynamics, geophysics, theoretical mechanics, and mathematics. L. N. Sretenskiy is one of the greatest specialists on wave motions of liquids in the Soviet Union.

L. N. Sretenskiy has published more than a hundred works, three of them monographs.

The first mathematical works of L. N. Sretenskiy [2, 3, 4, 7, 12] are devoted to problems of differential geometry. In his Candidate's Dissertation, L. N. Sretenskiy [9] posed for the first time the problem of a systematic study of the solution of the integral Volterra equation, considered on the entire plane of the complex variable, by the methods of the theory of analytical functions. His dissertation contains a study of the singular points of the integral equation with a variable upper limit. In his subsequent works [33, 85], Leonid Nikolayevich considered the problem of the determination of the shape of an attracting body according to the values of its Newtonian potential on the plane, and also demonstrated the singularity of the determination of the shape of the attracting body according to the values of its external potential. On the basis of P. S. Novikov's lemma of the orthogonality of the density of a body with zero external potential to any harmonic function, L. N. Sretenskiy proved the theorem of singularity under certain new conditions pertaining to the shape of the body.

In 1938 was published L. N. Sretenskiy's monograph "The Theory of Patterns of Equilibrium of a Liquid Rotating Mass" [35], containing an exposition of the fundamentals of the theory of patterns of equilibrium and A. M. Lyapunov's theory on patterns of bifurcation.

In 1946 L. N. Sretenskiy published a book on the theory of the Newtonian potential [50], which is not only a textbook, but also an original monograph, based on the fundamental works of A. M. Lyapunov on the problem of patterns of equilibrium and the Dirichlet problem.

Considerable space in L. N. Sretenskiy's works is occupied by practically important investigations on applied problems of hydrodynamics, related to the theory of ships. These include his works on wave

[resistance [16, 22, 24, 29-31, 38, 51, 52, 95, 104], the theory of the glider [14, 18, 39], the theory of fluctuation of a floating body [25], the motion of bodies under the surface of a liquid [32, 53], and the motion of a solid body with a cavity partially filled with a liquid [67]. The characteristic feature of these investigations is the fact that they take up many problems for the first time from the viewpoint of hydrodynamics. In the work "Theoretical Investigation of Wave Resistance" [24], a new derivation of the Mitchell formula is given, and formulas are obtained for the first time for the wave resistance of a ship, moving along the surface of a liquid in channels of infinite and finite depths, and the influence of the walls of the channel on the wave resistance is elucidated.

One of his recent works [104] solves the problem of determining the wave resistance of a ship moving along the surface of an interstratified liquid. Reference [52] is devoted to a study of the motion of a ship along a circular path on the assumption of constancy of its velocity. Here Kelvin's well known results on ship waves are developed. Reference [14] gives one of the first solutions of the problem of gliding.

L. N. Sretenskiy is the author of original investigations on general problems of wave theory [15, 60, 65, 81, 82]. In the article [15], he studied waves on the boundary surface and free surface of two liquids of different densities as applied to the phenomenon of the "dead wave," originally detected by F. Nansen on the "Fram." L. N. Sretenskiy was the first to give a complete geometrical description of the systems of waves formed during the motion of a ship under the conditions of a dead wave. The wave resistance of the ship in the presence of a dead wave is determined in reference [104].

The cycle of works of L. N. Sretenskiy [60, 65, 81, 82] contains an investigation of the origin and propagation of waves on the surface of a liquid from moving and stationary sites of disturbance.

The problem posed by meteorologists of waves on the boundary surface of two streams of liquid, flowing in the same direction at different rates, has already been solved in a number of works in hydrodynamics. The work of L. N. Sretenskiy [70] contains a generalization of these investigations: he has solved the problem of waves on the boundary surface of two streams, the velocities of which differ in magnitude and direction. The results of the investigation can be applied to a theoretical explanation of cirrocumulus clouds.

The waves on the boundary surface of two moving streams, which arise as a result of initial disturbances of the boundary surface, are studied in reference [66]. The particular case of the initial deviations is investigated in detail, and it is shown that a stationary observer notices almost periodic rises and falls in the surface of the liquid. This phenomenon is not detected in the usual Cauchy-Poisson problem.

In 1936 was published L. N. Sretenskiy's monograph "The Theory of Wave Motions of Liquids" -- one of the most complete handbooks on wave theory.

The method of joint application of the Euler and Lagrange variational, proposed by L. N. Sretenskiy, has permitted an effective solution

of various problems of the theory of waves of finite amplitude. The wave motions of liquids arising from pressures, distributed periodically on the free surface, have been studied by this method [7]. The case characterized by equality of the length of the free wave to the length of the wave of the distributed pressures is considered specially. This case cannot be studied by the methods of the theory of waves of infinitely small amplitude. The method of joint application of the Euler and Lagrange variables has proved extremely effective as applied to the problem of three-dimensional standing waves, which had not been studied previously. L. N. Sretenskiy has succeeded in indicating an algorithm permitting the solution of the problem of waves of finite amplitude in any approximation [78, 85]. By the method of joint utilization of both systems of variables, L. N. Sretenskiy has determined progressive waves of finite amplitude, propagated along the surface of a liquid contained between two circular cylindrical surfaces with vertical generatrices [87]. The work makes it possible to study the standing-wave system in ring channels.

L. N. Sretenskiy has succeeded in introducing a substantial improvement in the well known second method of Stokes into the theory of standing waves of finite amplitude [71] and has shown that the determination of standing waves reduces to the solution of an infinite system of cubic equations.

In references [107, 110] the Cauchy-Poisson problem is solved under certain initial conditions, taking into consideration the finite height of the waves formed. The solution of this problem, obtained in Lagrange variables, gives the velocities of the particles of the liquid and the increase in its surface in the form of trigonometric series of the Lindstedt-Poincaré type, free of secular members.

L. N. Sretenskiy is the author of a series of fundamental works on the theory of tides [19, 27, 28, 45, 55, 59, 88]. In one of these works [19], tides in a nonhomogeneous liquid are discussed, and it is shown that integration of the equations for this case can be reduced to an integration of the equations of tides in a one-layer liquid. The problem of the motion of a free tidal wave in a rotating channel under set conditions at the entrance to the channel is solved [26]. In reference [27], L. N. Sretenskiy has succeeded in giving an exact theory of free tidal waves within a polar basin. Maps illustrating the complex character of the reflection of Kelvin waves have been obtained.

L. N. Sretenskiy has discussed the propagation of the semidiurnal tidal wave in the water hemisphere of the Earth and has constructed a cotidal map, characterizing the propagation of the tidal wave, taking into consideration the shapes of the continents and islands of this hemisphere [45]. He has conducted an extensive investigation of the tides over a long period and has found the periods of the characteristic fluctuations of the level of the polar seas by means of asymptotic resolutions of the integrals of the airferential equations [55].

Now L. N. Sretenskiy is occupied in the problem, of importance to the national economy, of the tsunami waves and other waves in the solid shell of the Earth, generated by underwater earthquakes [74, 88, 92, 107, 112, 113]. He has discussed the elastic waves that arise under the

action of supplementary stresses is a result of the deformation of the ocean surface caused by the tide-forming forces and underwater earthquakes [72, 80, 82, 112]. These works form started the prediction of tsunami waves according to the readings of seismic stations. Subsequently he proposed methods for calculating the heights of the tsunami waves and gave schemes of the profiles of the waves in the coastal zone [107, 112].

L. N. Grtenasik has also taken up certain problems of the theory of viscous liquids [41, 54, 66]. He has studied the waves on the surface of a viscous liquid [41] that arise as a result of the initial displacement. Here he also considered certain types of standing waves of a viscous liquid and the wave resistance of a compact ship at normal pressures, moving evenly along the surface of the liquid. The latter problem is developed in reference [106], reported in Arild at the International Symposium on the Behavior of Ships on Swells (1959). This work presents formulas permitting a certain estimation of the influence of viscosity on the wave resistance of a ship of the Mitchell type. In reference [54] Isaak Nizolevich solved the problem of the diffraction of a vortex pair and generalized A. I. Vekrasov's solution of the diffraction of one vortex.

References [93, 103, 108] are devoted to a discussion of certain problems of the motion of gas jets at high speeds. L. N. Grtenasik has developed a method permitting the obtaining of exact solutions of problems of the jet motion of gases in conditions under which the classical method of S. A. Chaplygin cannot be used. The solution is analyzed in detail on the basis of the polymer model in the term of wave diffraction. The method is also often used in L. N. Grtenasik's to investigate the propagation of waves on the surface of a liquid (see [40, 65, 67]) under various conditions of motion of the liquid.

In completing this brief review of the works of L. N. Grtenasik, we should also mention his work on theoretical problems of hydrodynamics and acoustics.

The works of Isaak Nizolevich are characterized by originality, correctness of the mathematical and physical formulation of the problems, the relevance and profundity of his investigations, and a high analytical mastery.

Isaak Nizolevich has devoted more than 30 years to training the young generation of Soviet scientists. The course of lectures he delivers at the Mechanics-Mathematics Faculty of Moscow University are distinguished by originality, profound content, correctness of thought, and inspire the young people with a love for science. Isaak Nizolevich exerts great effect on the development of the young science graduate student. More than 40 persons have successfully completed their graduate studentship and defended Candidate's Dissertations under his supervision.

The high principle, modesty, and affability of Isaak Nizolevich always evoke great respect and love from his colleagues and from his students.

The editors of the journal wish Isaak Nizolevich good health and success in his service of science.

LIST OF WORKS OF L. N. SRETENSKIY\*

1. The Influence of Added Observations on the Coefficient of Correlation. Geofiz. buyll., (Geophysical Bulletin), 1926, No. 14, pp. 50-53.
2. On the Curving of Surfaces. Matem. sb., (Mathematical Symposia), 1929, Vol. 36, No. 2, pp. 109-111 (Summary in French).
3. Sur une generalisation du complexe tetrahedral. Matem. sb., (Mathematical Symposia), 1930, Vol. 37, Nos. 1-2, pp. 91-95. (Summary in Russian).
4. Works of Luigi Bianchi on the Transformation of Surfaces. Tr. Geometr. kruzhka NII matem. i mekhan. MGU (Works of the Geometrical Circle of the Scientific Research Institute of Mathematics and Mechanics, Moscow State University), 1930, No. 1, pp. 27-36.
5. Darboux, Gaston, (1842-1917). BSE (Great Soviet Encyclopedia), Vol. 20, 1930, cols. 426-427.
6. Curves. Tekhn. Ents. (Technical Encyclopedia), Vol. II, 1930, cols. 590-597; Figs. Bibliography of Five Titles.
7. On a Single Generalization of the Tetrahedral Complex. [Abstract of Report]. In the book: Vsesoyuznyy s'ezd matematikov v Khar'kove 24-29/VI 1930. (First All-Union Conference of Mathematicians in Khar'kov, 24-29 June 1930). Bulletin No. 1, Khar'kov, State Publishing House, 1930, p. 42.
8. On the Transformation of Triple Orthogonal Systems. [Abstract of Report]. Ibid, pp. 42-43.
9. Memoire sur les equations de M. v. Volterra. Matem. Sb. (Mathematical Symposia), 1931, Vol. 38, Nos. 1-2, pp. 1-44. (Summary in Russian).
10. On Extrapolation. In the book: Nauchnye trudy geofizicheskoy observatorii v Kuchine i teoreticheskogo otdela instituta (Scientific Works of the Geophysical Observatory in Kuchin and the Theoretical Division of the Institute) Moscow, State Geophysical Institute, 1931, p. 144. (Byull. Gos. Geofiz. insta (Bulletin of the State Geophysical Institute), No. 36).

\*The bibliography of the works of L. N. Sretenskiy was prepared by A. P. Yefanova according to materials of the Division of Bibliographies of Scientists of the Fundamental Library of Social Sciences, Academy of Sciences USSR.

11. Curves. Tekhn. ents., Dop. tirazh. (Technical Encyclopedia, Supplement), Vol. II, 1931, Col. 57-59, Figs. Bibliography of 5 Titles.

12. Potentsial'nye poverkhnosti s ploskimi liniyami krivizny (Potential Surfaces With Planar Lines of Curvature). Publishing House of the Academy of Sciences USSR. Department of Mathematics and Natural Sciences, Academy of Sciences USSR, 7th Series, 1933, No. 7, pp. 903-918.

13. On the Transfer of Heat by Liquids. Zh. geofiziki (Journal of Geophysics), 1933, Vol. 3, No. 1, pp. 4-31, Figs.

14. On the Motion of a Glider on Deep Water. Publishing House of the Academy of Sciences USSR, Department of Mathematics and Natural Sciences, 1933, No. 6, pp. 817-835, Figs.

15. Waves on the Surface of Separation of Two Liquids as Applied to the Phenomenon of "Dead Water." Zh. Geofiziki, 1934, Vol. 4, No. 3, pp. 332-370, Figs.

16. On One Problem of the Minimum in the Theory of the Ship. DAN SSSR (Reports of the Academy of Sciences USSR), 1935, Vol. 3, No. 6, pp. 247-248; Sur un probleme de minimum dans la theorie du navire. C. R. Acad. Sci. URSS, 1935, Vol. 3, 247-248.

17. Differential Geometry. BSE, Vol. 22, 1935, pp. 608-618. Bibliography of 6 Titles [in collaboration with I. Burstin].

18. On the Theory of the Glider. In the book: Trudy I Vsesoyuznoy konferentsii po gidrodinamike (Works of the First All-Union Conference on Hydrodynamics), Moscow, Central Aero-Hydrodynamical Institute, 1935, pp. 81-93.

19. General Theory of Influxes in Inhomogeneous Liquid. Zh. geofiziki, 1935, Vol. 5, No. 4, pp. 395-409. Bibliography of 3 Titles.

20. The Heating of a Stream of Liquid by Solid Walls. PMM (Applied Mathematics and Mechanics), 1935, Vol. 2, No. 2, pp. 163-179.

21. Teoriya volnovykh dvizheniy (Theory of Wave Motions of liquid), Moscow-Leningrad, United Scientific-Technical Publishing House, Main Editorial Board of General Technical Literature and Monographs, 1936, p. 303. Figs. Bibliography of 193 Titles.

22. The Calculation of the Wave Resistance of a Ship Moving Along the Surface of Water of Finite Depth. DAN SSSR, 1936, Vol. 2, No. 7, pp. 259-261. Bibliography of 2 Titles.

23. Sur la determination de la resistance ondulatoire d'un navire se déplacant à la surface de l'eau d'une profondeur finie. C. R. Acad. Sci. URSS, 1936, Vol. 2, No. 7, pp. 265-267.

24. Teoreticheskoe issledovanie o volnovom soprotivlenii (Theoretical Investigation of Wave Resistance), Moscow, Central Aero-Hydro-dynamical Institute, 1937, p. 55 (Trudy TsAGI (Works of the Central Aero-Dynamical Institute), No. 319).

25. O zatukhanií vertikal'nykh kolebaniy tsentra tyazhesti plavayushchikh tel. (On the Quenching of Vertical Oscillations of the Center of Gravity of Floating Bodies), Moscow, Central Aero-Hydrodynamical Institute, 1937, p. 12 (Trudy TsAGI (Works of the Central Aero-Hydrodynamical Institute), No. 330).

26. Logarithmic Potential. Fiz. Slovar' (Dictionary of Physics), Vol. 3, 1937, cols. 352-356, Figs., Bibliography of 3 Titles.

27. On the Motion of a Free Tidal Wave Within the Polar Basin: Reflection of the Kelvin Waves. Izv. AN SSSR, seriya geofiz. (News of the Academy of Sciences USSR, Geophysical Series), 1937, No. 3, pp. 383-402, Figs. Bibliography of 2 Titles.

28. Motion of a Free Tidal Wave in a Rotating Channel. Uch. zap. MGU (Scientific Notes of Moscow State University), 1937, Vol. 7, Mekhanika (Mechanics), pp. 20-42, Figs., Summary in English.

29. On the Wave Resistance of a Ship During Nonsteady-state Motion. In the book: Teoreticheskiy sbornik TsAGI (Theoretical Collection of the Central Aero-Hydrodynamical Institute), 4. Moscow, Central Aero-Hydrodynamical Institute, 1937, pp. 16-19. Summary in English. (Tr. TsAGI, No. 301).

30. On the Wave Resistance of a Ship Moving in a Channel. Ibid, pp. 20-21.

31. The Wave Resistance of Ships During Motion in Channels (Abstract) In the book: Trudy konferentsii po teorii volnovogo soprotivleniya (Works of the Conference on the Theory of Wave Resistance), Moscow, Central Aero-Hydrodynamical Institute, 1927, pp. 138-139. (Resume in English).

32. Dvizhenie tsilindra pod poverkhnost'yu tyazheloy zhidkosti (The Motion of a Cylinder Under the Surface of a Heavy Liquid). Moscow, Central Aero-Hydrodynamical Institute, 1938, p. 27, Figs. (Trudy TsAGI, No. 345).

33. One Converse of the Problem of the Potential Theory. Izv. AN SSSR, seriya mat. (News of the Academy of Sciences USSR, Mathematical Series), 1938, Vol. 2, No. 5-6, pp. 551-570. (Summary in English), Bibliography of 6 Titles.

34. The Application of Integral Invariants to the Problem of the Motion of a Liquid Ellipsoid. Uch. zap. MGU, 1938, No. 24, Mekhanika, 2, pp. 22-27. (Summary in English).

35. Theory of Equilibrium Contours of a Liquid Rotating Mass. Usp. matem. nauk. (Advances in Mathematical Sciences), 1938, No. 5, pp. 187-230.

36. The Application of the Legendre Transformation to the Theory of the Jet. In the book: Teoreticheskiy sbornik TsAGI. 5. Moscow, Central Aero-Hydrodynamical Institute, 1938, pp. 36-40. Figs. (Trudy TsAGI, No. 342).

37. Remarks on the Theory of Pitching of a Ship, Proposed by Academician A. N. Krylov. Ibid, p. 41.

38. K teorii volnovogo soprotivleniya (On the Theory of Wave Resistance), Moscow, Central Aero-Hydrodynamical Institute, 1939, p. 28, (Trudy TsAGI, No. 458).

39. On the Theory of the Glider. Izv. AN SSSR, OTN (News of the Academy of Sciences USSR, Department of Technical Sciences), 1940, No. 7, pp. 3-26, Figs., Tables.

40. On the Gravitational Oscillations of a Gas Sphere. FMM, 1940, Vol. 4, Nos. 5-6, pp. 87-104, Figs. Bibliography of 2 Titles, Summary in English.

41. O vlnakh na poverkhnosti vyazkoi zhidkosti (Waves on the Surface of a Viscous Liquid), Part 1, Moscow, Office of New Technology, Peoples Commissariat of the Aviation Industry, 1941, p. 34, (Tr. TsAGI, No. 541).

42. Newtonian Theory of Tides and Contours of the Earth. In the book: Isaak N'yuton. 1648-1727. Sbornik statei k trehsotietiyu so dnye rozhdeniya (Issac Newton. 1648-1727. Collection of Articles on the 300th Anniversary of his Birth). Moscow-Leningrad, Publishing House of the Academy of Sciences USSR, 1943, pp. 211-243. Figs.

43. In Memory of Academician S. A. Chaplygin. Izv. AN SSSR, OTN, 1943, Nos. 3-4, pp. 3-8.

44. The Flowing of a Gas Flow Around Flat Circulars. Izv. AN SSSR, OTN, 1945, No. 7-8, pp. 122-127. Figs.

45. The Propagation of the Semi-diurnal Tidal Wave in the Water Hemisphere of the Earth. Izv. AN SSSR, seriya geogr. i geofiz. (News of the Academy of Sciences USSR, Geographical and Geophysical Series), 1945, Vol. 9, No. 3, pp. 250-259. Bibliography of 2 Titles. Summary in French.

46. An Approximate Method For Solving Problems of the Flowing of a Gas Stream Around Bodies. In the book: Referaty nauchno-issledovatel'skikh rabot za 1943-1944 gody. Odelenie fiziko-matematicheskikh nauk AN SSSR (Abstracts of Scientific Research Works for 1943-1944. Department of Physico-Mathematical Sciences, Academy of Sciences USSR), Moscow-Leningrad, Publishing House of the Academy of Sciences U.S.S.R., 1945, p. 71.

47. Influence of the Parameters of a Ship Body on Its Wave Resistance. Ibid, p. 61.

48. On the Propagation of the Diurnal and Semi-diurnal Tidal Waves in the Water Hemisphere of the Earth. Ibid. p. 104.

49. A Proof of the Gilbert-Schmidt Theorem. DAN SSSR, 1946, Vol. 58, No. 5, pp. 195-196.

50. Teoriya N'yutonovskogo potentsiala (Theory of the Newtonian Potential), Moscow-Leningrad, State Publishing House of Technical Literature, 1946, p. 310, Figs.

51. Influence of Variation of the Principal Dimensions of a Ship on Its Wave Resistance. PMM, 1946, Vol. X, No. 1, pp. 21-31, Figs. Tables (in collaboration with I. V. Gulya) (Summary in English).

52. On the Waves that Lift a Ship During Motion in a Circular Path. Izv. AN SSSR, OTN, 1946, No. 1, pp. 13-22.

53. On the Forces Acting Upon a Sphere While in Motion Along a Circular Path Under the Surface of a Fluid. DAN SSSR, 1946, Vol. 54, No. 9, pp. 777-778; On the Forces Acting Upon a Sphere While in Motion Along a Circular Path Under the Surface of a Fluid. C. R. Acad. Sci. URSS, 1946, Vol. 54, No. 9, pp. 777-778.

54. On the Diffusion of a Vortex Pair. Izv. AN SSSR, OTN, 1947, No. 1, pp. 271-300, Figs.

55. Theory of Long-Period Tides. Izv. AN SSSR, seriya geogr. i geofiz., 1947, Vol. 2, No. 5, pp. 197-210.

51. Commentary on the Work "Certain Problems Related to the Planar Problem" in the book Lyapunov A. M. Izbrannye trudy (Selected Works), Leningrad, Publishing House of the Academy of Sciences USSR, 1948, pp. 457-471.

52. Commentary on the work "Investigations in the Theory of Motion of the Heavenly Bodies." Ibid., no. 458-462.

53. On Circular Waves on the Surface of a Rotating Liquid. Izv. AN SSSR, OTN, 1949, No. 1, pp. 5-10.

54. On Symmetrical Tides of a Heterogeneous Liquid. Izv. AN SSSR, OTN, Geogr., geofiz., 1949, Vol. 13, No. 1, pp. 75, Figs. 1-3.

55. On the Waves Formed by an Underwater Source Situated Below the Surface of a Sphere. Izv. AN SSSR, seriya geogr., 1949, OTN, 1949, Vol. 13, No. 1, pp. 473-476.

56. On the Works of S. A. Chaplygin on the Dynamics of Nonholonomic Systems. In the book of S. A. Chaplygin Issledovaniya po dinamike neholonomnykh sistem. (Investigations of the Dynamics of Nonholonomic Systems), Moscow-Leningrad, State Publishing House of Technical Literature, 1950, pp. 100-107.

57. Waves. In the book: Mekhanika v SSSR za tridtsat' let (Mechanics in the USSR during the 30 Years from 1917-1947). Moscow-Leningrad, State Publishing House of Technical and Theoretical Literature, 1950, pp. 214-220. Bibliography 1-3 Titles.

58. On the Works of S. A. Chaplygin on Theoretical Mechanics. In the book: Chaplygin S. A. Soch. soch. (S. A. Chaplygin, Collected Works), Vol. 3, Matematika i mehanika. Rechi i doklady (Mathematics and Mechanics. Speeches and Reports), Moscow-Leningrad, State Publishing House of Technical and Theoretical Literature, 1950, pp. 356-376.

59. On the Works of S. A. Chaplygin on Hydrodynamics. Ibid., no. 113, Figs. (In collaboration with M. I. Surzhevich).

60. The Planar Problem of the Propagation of Waves in a Basin from an Underwater Source. Izv. AN SSSR, OTN, 1950, No. 1, pp. 11-18. Bibliography of 1-3 Titles.

61. Refraction and Reflection of Plane Waves in a Liquid with a Change from One Depth to Another. Izv. AN SSSR, OTN, 1950, No. 1, pp. 19-21-124.

11. Oscillation of Liquids in a Rotating Vessel. Izv. AN SSSR, OTN, 1951, No. 5, pp. 144-150. Figs.

12. Resolution of the Bessel Function, Considered as a Function of the Index, In a Series According to the Principal Part. Vestn. MGU (Herald of Moscow State University), 1951, No. 2, seriya fiz-matem. i estestv. nauk (Physico-Mathematical and Natural Science Series), No. 5, pp. 14-17.

13. The Propagation of Waves From a Resounding Disk. Uch. zap. MGU 1951, No. 34, Mekhanika, Vol. 1, pp. 275-295. Figs.

14. Survey of Works on Wave Theory During the Time from 1945 to 1950. Uch. Zap. MGU, 1950, No. 152, Mekhanika, Vol. 1, pp. 7-20. Bibliography of 82 Titles.

15. A Method For Determining Waves of Finite Amplitude. Izv. AN SSSR, OTN, 1952, No. 5, pp. 638-696. Figs. Bibliography of 2 Titles.

16. The Propagation of Elastic Waves Arising During the Motion of a System of Normal Stresses Along the Surface of a Hemisphere. Trudy Moskovsk. matem. obshch. (Works of Moscow Mathematical Society), 1952, Vol. 1, pp. 1-100, Figs. Bibliography of 1 Title.

17. On Waves on the Surface of Separation of Two Streams of Liquid Flowing at an Angle to One Another. Izv. AN SSSR, OTN, 1952, No. 12, pp. 176-178.

18. Standing Space Waves of Finite Amplitude. In the book: dokladov na Bsesoyuznoye soveshchanii po gidrodinamike ("Proceedings of Reports at the All-Union Conference on Hydrodynamics"), Moscow, Publishing House of the Academy of Sciences USSR, 1953, p. 47.

19. Action of the Coriolis-Chaplygin Gyroscope. Izv. AN SSSR, OTN, 1953, No. 1, pp. 107-119. Figs.

20. The Scientific Creativity of S. A. Chaplygin. On the Tenth Anniversary of his Death. Izv. AN SSSR, OTN, 1953, No. 1, pp. 116-120.

21. Waves of Finite Amplitude Arising From Periodically Distributed Pressure. Izv. AN SSSR, OTN, 1953, No. 4, pp. 49-51.

22. The Three-Dimensional Problem of Determining Standing Waves of Finite Amplitude. DAN SSSR, 1953, Vol. 89, No. 1, p. 25-28. Bibliography of 2 titles.

59. The Motion of Three Points Along a Rotating Orbit. Vestn. MGU, 1953, No. 2, pp. 15-19.

60. Remarks on the Posthumous Work of N. N. Luzin On the Integration of the Equations of Curvature of a Surface on a Principal Axis. Usp. matem. nauk (Advances in Mathematical Sciences), 1953, Vol. 8, No. 2, pp. 75-82. Bibliography of 3 Titles.

61. Motion of a Vibrator Under the Surface of a Liquid [Brief Exposition of a Report Read at the Session of the Moscow Mathematical Society]. Usp. matem. nauk, 1953, Vol. 8, No. 4, pp. 173-174.

62. Motion of a Vibrator Under the Surface of a Liquid. Izv. Moskovsk. matem. ob-shva, 1954, Vol. 3, pp. 5-14.

63. The Propagation of Sound in an Isothermal Atmosphere. Izv. AN SSSR, seriya geofiz., 1954, No. 1, 134-142.

64. On the Uniqueness of the Determination of the Shape of an Attracting Body According to Values of Its External Potential. DAN SSSR, 1954, Vol. 99, No. 1, pp. 21-22.

65. The Three-Dimensional Problem of Standing Waves of Finite Amplitude. Vestn. MGU, 1954, No. 5, seriya fiz-matem. i estestv. nauk, No. 3, pp. 3-12. Bibliography of 5 Titles.

66. Potential Theory. BSE, Second Edition, Vol. 34, 1955, pp. 272-273, Figs. Bibliography of 4 Titles.

67. The Propagation of Waves of Finite Amplitude in a Circular Channel. Trudy Morsk. gidrofiz. in-ta (Works of the Maritime Hydrophysics Institute), 1955, Vol. 6, pp. 5-9.

68. The Propagation of Waves in an Elastic Hemisphere During the Motion of a Tidal Wave Along the Surface of a Circular-Shaped Basin. Ibid., pp. 10-23.

69. The Cauchy-Poisson Problem For the Surface Separation of Two Flowing Streams. Izv. AN SSSR, seriya geofiz., 1955, No. 6, pp. 505-515, Figs.

70. The Formation of Regular Sequences of Waves. In the book: tezisy dokladov mehaniko-matematicheskogo fakulteta Moskovsk. un-ta (Thesis of Reports of the Mechanico-Mathematical Faculty of Moscow Institute), Moscow, Moscow State University, 1955, p. 16. (Jubilee Scientific Session Dedicated to the 200th Anniversary of the University, 9-13 May 1955).

91. A Study of the Excitation of a Rotating Dipole. Akust. Zh. (Acoustical Journal), 1956, Vol. I, No. 1, pp. 107-111. Figs.

92. The Excitation of Elastic Oscillations of a Hemisphere by the Wave Motions of a Liquid. In the book: Byulleten' Soveta seismologii (Bulletin of the Seismological Council), No. 2, Sbornik statey po Tsunam (Collection of Articles on the Tsunami). Moscow, Publishing House of the Academy of Sciences USSR, 1956, pp. 13-26.

93. On the Directed Emission of Waves From a Region Subjected to External Pressure. PMM, 1956, Vol. XX, No. 3, pp. 349-351. Figs.

94. On Two Problems Relating to the Theory of Gaseous Jets. VII International Congress of Applied Mechanics. Brussels, 1956. Book of Abstracts. Section I, p. 145. Parallel Text in French.

95. Calculation of the Tangential Forces of the Wave Resistance of a Sphere Moving in a Circular Path. In the book: Trudy Motsk. Sidrofiz. in-ta, 1957, Vol. II, p. 3-17.

96. Remark on the Article of L. N. Sretenskiy "On the Directed Emission of Waves From a Region Subjected to External Pressure," PMM, 1956, Vol. XXI, No. 4, pp. 395-396.

97. A Study of the Motion of a Ship and the Operation of Test Basins (Conference in Holland and Spain). Zestav. AN SSSR (Report of the Academy of Sciences USSR), 1956, No. 1 [In collaboration with S. S. Voyt].

98. On the Theory of Gas Jets. DAN SSSR, 1958, Vol. 119, No. 2, pp. 1113-1114.

99. The Dynamics of Solids in the Works of Euler. In the book: Leonard Euler Sb. stativ v chet' 250-letiya so dnya rozhdeniya, predstavleniyakh Akademii nauk SSSR (Leonard Euler. Collection of Articles in Honor of the 250th Anniversary of his Birth, Presented by the Academy of Science USSR), Moscow, Publishing House of the Academy of Sciences USSR, 1958, pp. 210-231. Figs. 1 inset portrait. Summary in German.

100. Unpublished Manuscripts of A. M. Lyapunov. In the book: Trudy Tret'ego Vsesoyuznogo matematicheskogo s'ezda, Moskva, iyun' iyun' 1956 (Third All-Union Mathematical Conference, Moscow, June-July 1956), Vol. 3, Obozrnye doklady (Survey Reports), Moscow, Publishing House of the Academy of Sciences USSR, 1958, pp. 490-500.

101. On the Theory of Gas Jets. PMM, 1959, Vol. XXIII, No. 2, pp. 305-332, Figs. Bibliography of 7 Titles.

102. On the Chaplygin Functions. PMM, 1959, Vol. XXIII, No. 3, pp. 574-575. Bibliography of 2 Titles.

103. Diffraction of Waves in the Cauchy-Poisson Problem. DAN SSSR, 1959, Vol. 129, No. 1. pp. 59-60.

104. On the Wave Resistance of a Ship in the Presence of Internal Waves. Izv. AN SSSR, OTN, Mekhanika i mashinostroenie (News of the Academy of Sciences USSR, Department of Technical Sciences, Mechanics and Machine Construction), 1959, No. 1, pp. 56-63.

105. Remarks on the Posthumous Work of N. N. Luzin on the Integration of the Equations of Curvature of Surfaces on the Principal Axis. In the book: Luzin N. N. Sobr. soch. (Luzin, N. N. Collected Works), Vol. 3, Raboty po razlichnym voprosam matematiki (Works on Various Problems of Mathematics), Moscow, Publishing House of the Academy of Sciences USSR, 1959, pp. 461-467. Bibliography of 3 Titles.

106. Sur la Resistance due aux Vagues d'un Fluide visqueux. Proceedings Symposium on the Behaviour of Ships in a Seaway, 1959, Vol. II, Wageningen.

107. A Hydrodynamic Problem Related to the Problem of the Tsunami. DAN SSSR, 1960, Vol. 131, No. 2, pp. 273-274.

108. The Cauchy-Poisson Problem for Waves of Finite Amplitude. DAN SSSR, 1960, Vol. 133, No. 3, pp. 544-545 [in collaboration with Ya. I. Sekerzh-Zenkovich].

109. The Cauchy-Poisson Problem for Waves of Finite Amplitude. In the book: Vsesovuznyj s'ezd po teoreticheskoy i prikladnoj mehanike. M., 27 yanvarya-3 fevralya 1960 goda. Annotatsii dokladov (All-Union Conference on Theoretical and Applied Mechanics. Moscow, 27 January - 3 February 1960. Annotations of Reports). Moscow, Publishing House of the Academy of Sciences USSR, 1960, pp. 107-108. [In collaboration with Ya. I. Sekerzh-Zenkovich].

110. The Theory of Tides and Related Problems. Ibid, pp. 109-111.

111. The Cauchy-Poisson Problem for Waves of Finite Amplitude. Tretyj Norsk. gidrofiz. s'ezd, 1961, Vol. 24, Teoriya voln. (Wave Theory), pp. 3-24.

112. Calculation of the Height of Tidal Waves Along the Shore. Ibid., pp. 25-47 [In collaboration with A. S. Savrov, k.v.].

113. Elastic Waves Arising from Normal Stresses Applied to the Surface of a Hemisphere. In the book: Problemy mekhaniki sploshnoy sredy. K 70-letiyu akademika N. I. Muskhelishvili (Problems in the Mechanics of a Solid Medium. On the 70-th Birthday of Academician N. I. Muskhelishvili), Moscow, Publishing House of the Academy of Sciences USSR, 1961, pp. 411-417.

## SEVENTY YEARS FOR I. D. STRASHUN

(Following is a translation of an article by E. D. Gribanov in the Russian language periodical Sovetskoye Zdравоохранение Киргизии (Soviet Public Health of Kirgiziya), Frunze, No 4, 1962, p 64.)

This year Il'ya Davidovich Strashun, one of the first members of the Academy of Medical Sciences USSR, the oldest Soviet medical historian, founder of the first Chair of the History of Medicine in our country, had his 70th birthday.

I. D. Strashun was born on 10/22 March 1892 in the city of Vil'nyus. I. D. Strashun had already begun his working activity in his high school years, giving private lessons. He was a member of the revolutionary circle in high school. I. D. Strashun entered Moscow University in the memorable year 1911, when the czarist minister Kasso drove out the best professors from the university, while others left in the form of a protest. Hence the young student attended lectures of leading professors outside the university, as a matter of personal interest.

The First World War called I. D. Strashun to the front as an ordinary physician. Here for the first time he was occupied in the work of sanitary instruction. At this work he met A. V. Mol'kov, Chairman of the Pirogovskiy Commission on the Dissemination of Hygienic Knowledge to the People. After the revolution they worked hand-in-hand at the forefront of sanitary enlightenment. In 1920 I. D. Strashun became a Party member. From 1919 on he was Director of Sanitary Education Work at the Caucasus front. In 1921 he became Director of Sanitary Education Work in the Peoples Commissariat of Public Health. He remained at this work until 1930. In addition to heading the Sanitary Education Division, he also supervised the Publishing House of the Peoples Commissariat of Public Health, which was then transformed into Gosmedizdat (State Publishing House of Medical Literature) (now Medgiz), and in 1926 he entered the editorial office of the First Edition of the Great Medical Encyclopedia. I. D. Strashun began his pedagogical work in 1922 at the Chair of Social Hygiene of II MMU (Moscow Medical Institute) under Z. F. Solov'yev. An important link in the sanitary education work of I. D. Strashun was his participation in the organization of the Soviet Pavilion at the International Exposition in Dresden in 1930, which he supervised as a government comissar.

I. D. Strashun was the first dean of the sanitary faculty, which first graduated physicians in 1932. From 1930 on I. D. Strashun

[ ] presented a course in the history of medicine. In 1925 he became the first Soviet professor of the history of medicine at I MMU (Moscow Medical Institute). At the Fifth All-Union Conference of Public Health Divisions in 1927, he proposed that the creation of a museum of the history of Soviet medicine be begun. I. D. Strashun's major work in the '30's was the large article "Medicine" in the 17th volume of the Great Medical Encyclopedia.

In 1940 he was selected as Professor of Social Hygiene at I LMI (Leningrad Medical Institute). During the blockade of Leningrad, I. D. Strashun was Director of I LMI. During this time he prepared and published two parts of the work "The Russian Physician in the War" of a contemplated five volumes.

At the end of 1944 I. D. Strashun was confirmed as a member of the Academy of Medical Sciences USSR, and in March 1945, coming to Moscow, he began the organization of the Institute of the Organization of Public Health and History of Medicine, under the Academy of Medical Sciences, in which he worked until 1949.

In 1959 I. D. Strashun made several reports at the First All-Union Conference of Medical Historians in Leningrad. The principal work of the last period of I. D. Strashun's activity is a large section in the collective work "Medicine" in the 17th volume of the Great Medical Encyclopedia, Second Edition, devoted to Soviet medicine of the 19th and beginning of the 20th centuries. Another major work of the last period, written over a number of years, is the "History of Russian Social Medicine during A Century (From the Middle of the 19th to the Middle of the 20th Century)."

The medical community sees Il'ye Davidovich as a mentor and guide, not by virtue of his position, but because he is a person always ready to aid all his comrades in their work, without sparing his strength and health.

PAVEL GRIGOR'YEVICH SVETLOV  
(On His 70th Birthday)

[Following is a translation of an article by L. N. Zhinkin in the Russian language periodical Tsitolgiya (Cytology), Leningrad, Vol 4, No 4, 1962, pp 462-470.]

This year the greatest embryologist of our country, Corresponding Member of the Academy of Medical Sciences USSR, Professor Pavel Grigor'yevich Svetlov, had his 70th birthday.

Pavel Grigor'yevich was born on 10 September 1892 in the village of Ushak', not far from Leningrad (then Novgorodskaya guberniya). P. G.'s father was a veterinary physician, scientist, and social worker.

In 1910, after finishing high school with a silver medal, P. G. entered Petersburg University, in the physicomathematical faculty in the natural science category, in the group of biologists, and specialized at the Chair of Invertebrate Zoology, headed by Professor V. A. Dogel'.

At the chair P. G. did considerable practical work under the direct supervision of P. P. Ivanov and D. M. Fedotov. The influence of P. P. Ivanov had its effect in the emergence of an interest in embryology. During the summer of 1913, P. G. worked at the Sevastopol' Biological Station, and in 1914 at the Murmansk Biological Station, studying marine fauna. In his student years, P. G. conducted an investigation under the supervision of D. M. Fedotov, of the structure of the Niedermann bodies in starfish, which was published in 1916. The war prevented him from continuing his scientific work. After finishing at the university in 1915, P. G. was mobilized, and after completing officer's school, he was sent to the Caucasian front, where he participated in battles with the Turks. In December 1917, P. G. was selected as an assistant at the Chair of Invertebrate Zoology of Perm University, headed by D. M. Fedotov, and again returned to research work. At Perm University, P. G. conducted work along two lines. First, he conducted an investigation of the systematics, zoogeography, and biology of Oligochaeta. He also continued his zoological investigations during the following years, worked up collections of various expeditions, and published a number of works, but these investigations were never the basic direction in P. G.'s work, but were only continued in his spare time. His last publication on this topic was in 1957. The basic direction of P. G.'s work in Perm, which to a significant degree determined all his ...

further scientific activity, lay in a study of the embryonic development of Oligochaeta. P. G. investigated the peculiarities of the cleavage of Rhynchulus, following the fate of the blastomeres. Later he studied the development of Naididae (Chetogaster), in which he detected a sharp deviation from the spiral type of cleavage. At the stage of eight blastomeres, only 1D gives rise to an embryo, while the remaining three macromeres and four micromeres form a temporary shell (parablast). Such a peculiarity of spiral cleavage apparently arose in connection with freezing of the egg cocoons into ice, since the multiplication of Naididae takes place in the autumn.

Another interesting object of investigation was the development of the rainworm Bimastus constrictor, etc. Here also he detected a deviation from the typical spiral cleavage, related to the conditions of development. The entire embryo develops from the quadrants F and N. The macromer A does not divide at all, while the macromer C divides only once. From the initial stages of development, the three undivided blastomeres fulfill the function of osmoregulation for the developing embryo. To elucidate their function, P. G. conducted experiments to study the osmotic pressure of the liquid inside the cocoon, and to understand the functional significance of the tubules that form in these blastomeres, he used intravitam stain with neutral red, etc. He conducted a simultaneous study of the development of the lumbricide, in which all four quadrants form the embryo, and the development of which takes place in a medium possessing a higher osmotic pressure.

The great significance of these investigations by P. G. lay in the fact that they showed deviations from determined, spiral cleavage, regulated in character, and arising as an adaptation to development under definite conditions. In 1926 P. G. published a large (23<sup>4</sup> pg.) monograph on the development of rainworms. The special value of this investigation lay in the fact that here was combined a morphological and a physiological approach to the analysis of development, and the entire analysis was conducted within a broad comparative plan. Since then the basic general problem to which P. G.'s principal investigations have been devoted was the study of determination and regulating phenomena in the individual development of various animals.

In 1925, at the invitation of Academician N. V. Mazonov, P. G. came over to work at the Laboratory of Experimental Zoology and Animal Morphology of the Academy of Sciences USSR and traveled to Leningrad. Here he completed his work on the development of rainworms, studied the osmotic pressure and permeability of the membranes of trout egg cells, gave a report on the applicability of P. P. Ivanov's theory of larval segments to the segmentation of vertebrate animals (the article on this topic was not published until 1960), then turned to a study of the changes in the regeneration process during ontogenesis in amphibia. This large series of works continued for several years. P. G. detected a mosaic stage of development, when regeneration or regulation of shape does not take place, during the process of regeneration of the tail in axolotl. When an injury is applied, the shape is restored in the emerging tail bud. Then a stage sets in, when reparative is retarded, while later regeneration takes place normally. An analogous stage has also

[been detected in the development of the tadpole, the regeneration of regenerates in axolotl, the development of extremities (F. F. Murtazi), the development of planaria, etc. Further investigations consisted of a study of the injuring action on development and regeneration by external factors, in particular, ionizing radiations and poisons. This series of works of P. G. himself and of his associates created a definite and distinct representation of alternation of periods of determination and regulation in individual development, as well as of the relationship of these processes to the sensitivity of the embryo as a whole or of its individual organs. The development of problems of critical periods in development, their relationship to determination and sensitivity to external influences took the form of a harmonious theory, which P. G. is now developing.

The next series of works was devoted to the study of differential sensitivity of the sexes. Beginning with the influence of starvation on the death rates of male and female Drosophila, P. G. established a greater sensitivity of males to this factor. Then he studied the sensitivity of the imaginal buds of the larvae and the intestinal epithelium of adult male and female Drosophila. In order to reveal whether or not the difference in sensitivity is related to the chromosomal apparatus, he investigated the sensitivity of the imaginal buds in the butterfly Dasichira sp. He found that the differential sensitivity does not depend on the set of chromosomes, since both in Dasichira, and in Drosophila, the males possessed greater sensitivity, in spite of the different set of sex chromosomes.

In the same plan, investigations were conducted on plants, while P. G.'s students and associates conducted investigations of worms (Dinophilus), crustaceans (Cyclops, Gammarus), amphibia, mammals, etc. The established pattern is general in character and is related to tissue and cellular differences, or, as P. G. has indicated, is primary in character. Later P. G. began to conduct an investigation on a broad scale of the sensitivity of mammals during the period of their embryonic development, to external influences, especially to ionizing radiation. He succeeded in detecting critical periods during the embryonic development of white rats, when the greatest sensitivity of the embryo or individual organs of it is exhibited. This series of works is now being continued and is a continuation of similar investigations, which were conducted previously on amphibia. The establishment of critical periods in the development of mammals is of great significance for medicine, and research in this field is being conducted on a large scale both in P. G.'s laboratory, and in other laboratories.

Here we have only briefly mentioned the basic directions of P. G.'s work. However, the works of P. G. himself do not exhaust his scientific activity. Even in the Laboratory of Experimental Zoology of the Academy of Sciences USSR, P. G. had students, who participated with him in the development of a number of problems.

P. G.'s work has taken place not only in Perm University and the Academy of Sciences, but also in Kazan' University, the Institute of Experimental Medicine, and the Institute of Obstetrics and Gynecology.

P. G.'s profound and broad knowledge, and his personal charm ...

have attracted young people to him. Now many of his students have already become doctors or fully independent scientists. P. G. refuses aid to no one -- his students include many workers whose supervisor he was not officially.

Those who surround him are attracted to P. G. by his great erudition, his unwavering benevolence to anyone who wishes to work seriously -- these are the basic features of P. G. as a scientific supervisor. P. G. has published about 100 works; he has also written a large book on experimental embryology, which has not yet been published. His numerous reports always gather a large number of listeners.

In addition to the enumerated investigations, P. G. has devoted a number of articles to theoretical problems, has been occupied with problems of the history of science and popularization, and has written articles for the Great Medical Encyclopedia.

Now P. G. is in the prime of his creative forces. In his laboratory, included under the Institute of Experimental Medicine of the Academy of Medical Sciences USSR, investigations of the change of sensitivity during the period of embryonic development of mammals are continuing intensively. Many scientific workers are turning to him for aid and consultation, as the greatest Soviet embryologist.

In 1946 P. G. was elected Corresponding Member of the Academy of Medical Sciences, with the work of which his activity has been involved.

Let us wish Pavel Grigor'evich Svetlov further successes both in his research, and in transferring his vast knowledge to young people.

PAVEL GRIGOR'YEVICH SVETLOV

(On His 70th Birthday)

[Following is a translation of an article by G. A. Smirnoff and A. G. Knorre in Arkhiv Anatomii, Cistologii i Embriologii (Archives of Anatomy, Histology, and Embryology), Leningrad, Vol 43, No 9, 1962, pp 123-128.]

On 9 September 1962, the eminent Soviet embryologist, Corresponding Member of the Academy of Medical Sciences USSR, Professor I. S. Svetlov had his 70th birthday. In his creative path, rich in achievements, are reflected the basic stages and directions of the development of embryology in our country.

Pavel Grigor'yevich Svetlov was born on 6 September (26 August) 1892 in the village of Ushak' (now Tashenskiy rayon of Leningradskaya oblast). His father, Grigoriy Ivanovich Svetlov, was a master of veterinary sciences, and his mother was Mariya Petrovna Svetlova (nee Tkachenko).

After finishing at the Tsar's Village High School, P. G. entered St. Petersburg University in 1910 in the natural science division of the physicomathematical faculty. His teachers during his student years were P. F. Ivanov and especially D. M. Fedotov. By the completion of his university work, Pavel Grigor'yevich had completed a graduation thesis on the structure of the Tiedemann bodies of starfish (1916). However, he had not remained at the university; he had been mobilized and had participated in military actions on the fronts of the First World War. All the subsequent history of Pavel Grigor'yevich's scientific research work shows that his not staying at the university was a great mistake.

After demobilization, P. G. Svetlov worked at Ierm University, and here his first reports on the embryology of oligochaetous segmented worms (Oligochaeta), which brought his world renown as an embryologist, appeared in print. P. G. Svetlov's investigations of the embryology of oligochaetous segmented worms substantially enriched the knowledge of the development of representatives of this group, bringing many new and theoretically important facts. In Rhynchelmis -- a representative of the more primitive group Microdili -- a spiral cleavage rather greatly modified in comparison with polychaetous worms (Polychaeta) was established by means of a letter-number investigation (cell lineage procedure)[123c]. P. G. Svetlov [123a, 128a] established a greatly modified type of development in the specialized, soil-dwelling Megairili ...

(rainworms). Thus, in Bimastus cleavage proceeds according to the spiral type only within limits of the derivatives of the large blastomer CD, whereas the blastomer A does not undergo any cleavage at all, while the blastomer B divides only once. The group of three blastomers A, BI, BII is converted to a unique temporary organ of the embryo -- an osmoregulator. Thus, spiral cleavage in Bimastus, and, we might think, in all the representatives of the Lumbricidae family as well, is accomplished according to a duet method, and not according to a quartet method. This is all the more interesting in that according to P. G. Svetlov's data, in the phylogenetically produced form -- Eisenia foetida, in the embryo of which the need for osmoregulators has been lost as a result of a sharp change in the ecological conditions of development, those blastomers that assume the osmoregulatory function in other species here begin to divide and participate in the formation of the ectoderm of the embryo. In the indicated works, the processes of gastrulation and formation of the larva in rainworms are also investigated, and the results are presented of varied experiments on intravitrum staining of the embryo and the influence on it of salt solutions to elucidate the physiological significance of the blastomers A, BI, BII, and to study the dependence of the embryo on the osmotic conditions of the medium. Thus, the series of investigations under consideration combines the morphological and ecolo-physiological approaches and methods of investigation.

P. G. Svetlov [1926b] discovered a remarkable type of development in Chaetogaster and other Naididae, in which the entire embryo is constructed of only one blastomer, ID, while the remaining seven blastomers of the eight-celled stage (parablast, according to P. G. Svetlov), form a temporary shell. The cleavage products of the ID blastomer at first exhibit elements of spiral cleavage, but then an "anarchy" of cleavage sets in: the blastomers intermingle, and only then form the formative group. At the stages of development where the number of derivatives in the quadrant D exceeds 10, "it is impossible to find two preparations where the arrangement of the blastomers would be in any way comparable with one another" (p. 364). Hence P. G. believes that "further development can be correctly understood only under the assumption that the morula consists of entirely homogeneous cellular material" (p. 364) and arrives at the conclusion that "cellular determination does not take place during the time of cleavage . . . Determination during the time of cleavage is limited by the separation of the parablast and formative portion" (p. 365).

P. G. Svetlov's investigations of the development of oligochaetous worms represent the most significant contribution to the physiological embryology of this group in the entire embryological literature of the 20th Century; moreover, P. G. has investigated the fauna, systematics, and ecology of various families of Oligochaeta over a period of many years (1924-1957).

Traveling to Leningrad in the autumn of 1925, P. G. Svetlov started work at the Special Zoological Laboratory of the Academy of Sciences USSR, and here began a new series of investigations, devoted to the problem of embryonic regeneration, thereby entering the field of experimental

[embryology] This series includes works on the influence of temperature on the differential regeneration of the stages of development of the pectoral fin in the lake trout [1934b], together with A. I. Svetitskaya, on regeneration during embryonic development [1934a], on the influence of various factors inhibiting the development of the tail section of the body in Axolotl, the edible and grass frogs, triton [1937a, b], etc. In these investigations, distinguishing regenerative ability and the regenerative effect, P. G. established that the latter is dropped until the stage of the tail bud, and then returns again until the hatching of the larva from the egg membranes, after which it again begins to slowly drop off. Inhibition of the regeneration effect under the influence of injurious factors (radiation, etc.) is the stronger, the more intensive the process of development. An extremely important theoretical article, devoted to the critical analysis of the theory of organizers [1935c] also dates from this same stage of P. G. Svetlov's investigations. In it P. G. sharply criticizes, on the one hand, the narrow preformation theory of classical genetics, and, on the other hand, the narrow epigenetic approaches of the mechanics of development, and indicates the absence of a needed mutual relationship between these two fields of research.

His occupation with the experimental embryology of vertebrates did not weaken P. G.'s interest in the development of invertebrate animals, in the investigation of which he also turned to an ever wider utilization of experiments. Thus, he studied the morphallactic phenomena in the regeneration of Ripistes rubra (family Naididae from the class of oligochaetous segmented worms) [1936]. We should especially mention his work, small in volume but rich in facts and ideas, on regulatory phenomena in colonies of the sea-water bryozoan Cristatella mucedo [1935b, 4]. P. G. Svetlov showed empirically that actively mobile colonies of this bryozoan have a clearly pronounced ability to regulate their integrity and thereby a rather high degree of individuality. P. G. Svetlov draws interesting parallels in this work between the establishment of individuality of a colony of Metazoa, accompanied by only a negligible reduction of individuality of the individuals composing it, and the establishment of individuality of a multicellular individual (in phylogeny), in which the cells composing it are subordinate to the whole, and to a considerable degree lose the degree of individuality that characterizes unicellular organisms - the ancestors of Metazoa. Colonies of multicellular organisms are considered in the cited work as living molecules, aiding in the development of processes of cell theory; at the same time, P. G. emphasizes that there is no identity between colonies and individuals of Metazoa; the former represent a clearly marked class in the hierarchy of living individualities.

The higher death rate of the male portion of the population in comparison with the female portion during the period of the Leningrad blockade prompted P. G. Svetlov to work on an elucidation of the physiologically causes of this phenomenon. In a series of investigations (1947-1950) on animal and plant objects, J. I. convincingly showed that

the differential sensitivity of the sexes to starvation and various injurious influences is located in the properties of the substrate itself, i.e. the protoplasm of the cells of the male and female organisms, and followed up the establishment of these differences in ontogenesis. These investigations are of great general biological, and, potentially, practical significance as well.

His rich research experience in the field of experimental embryology prompted P. G. Svetlov to complete and prepare for publication the book "Fundamentals of the Mechanics of Development" in 1947. Unfortunately, although this book was set up in print, as a result of a number of circumstances at the time it was not issued. We should hope that P. G. will find time and strength for the publication of this book, including in it the modern achievements of world embryology and the results of his own recent investigations.

At the end of the '40's, heading the cabinet of embryology in the Institute of Obstetrics and Gynecology of the Academy of Medical Sciences USSR, P. G. Svetlov, jointly with G. F. Korsakova, undertook a series of investigations of the experimental embryology of mammals. This line of research has been continued and expanded in the laboratory of Embryology of the Institute of Experimental Medicine of the Academy of Sciences USSR, headed by P. G. Svetlov since 1956 (since it was restored after the Second World War). Experimentally analyzing the morphogenetic reactions of the fetus to overheating of the mother's organism (in rats), P. G. Svetlov showed [1954a] that the result of the experiment differs depending on the period of pregnancy during which the pregnant female was overheated: there is a sharply pronounced maximum of the action of hyperthermy on the 11th-12th day of pregnancy. As the distance from this period increases, the action of hyperthermy on the development of the fetuses is rapidly reduced: on the 6th-8th and on the 15th days of pregnancy it is relatively harmless for the fetuses. The heating of fetuses *in vitro* to a temperature of 42° causes no pathological changes in them. This fact, together with others, indicates that the developmental changes obtained are caused not by the direct action of increased temperature on the fetus, but by the combination of pathological changes caused in the body of the mother. It was revealed that the reaction of the fetus to hyperthermy of a pregnant animal is expressed primarily in pathological changes in the development of the placenta; the anomalies in the development of the embryo represent the result of functional inadequacy of the placenta. In another work [1954b], P. G. investigated the development of fetuses after overheating of the mother's organism under conditions of disrupted innervation of the uterus, and demonstrated that the nervous system of the mother's organism exerts a regulating influence on the conditions of development of intrauterine fetuses, providing for their normal development. This follows from the fact established by P. G. Svetlov and G. F. Korsakova, that deviations in the development of the embryo caused by overheating of the mother are more sharply pronounced in a uterus with disrupted innervation in comparison with a uterus on the unoperated side of the body of the same pregnant female. The same authors developed and

[ ] described in detail a topography of the vegetative innervation of the sexual system and an operative method of disrupting the innervation of the uterus in rats [1959f]. In other reports [1955a, 1957a], the authors describe the normal process of implantation of blastocytes in rats, and then show that under conditions of disruption of the innervation of the uterus, serious disorders occur in the process of implantation, a change in the distribution of fetus receptacles in the uterus, a lag in the degree of development of the embryos, and other deviations from the norm. They have also developed [1959e] a method for determining the functional adequacy of the placenta in rats by means of a quantitative consideration of its fetal vascularization.

Analyzing the peculiarities of the early period of the ontogenesis of mammals in the light of general embryological and medical problematic, P. G. Svetlov has established two critical periods in the development of mammals. One of them coincides with the process of implantation, the other with placenta formation. I. G. has devoted a large theoretical article [1960b] to the theory of critical periods of development in its general biological and special embryological aspects. In it he shows that during the critical periods, involving lowered regulatory activity, acts of determination of the processes of development are completed. The theory of critical periods, according to P. G. Svetlov, can be used as a basis for understanding the action of the environment on ontogenesis; it is thereby a basic concept of the pathogenesis of all embryopathies (including hereditary diseases). Through his experimental investigations and his own treatment of the critical periods of development, I. G. has given an embryological substantiation of the necessity of protecting the early period of the uterine life of man [1961b], arriving at the practically important conclusion of the need for reexamining the principles of care during pregnancy. "If the early periods of pregnancy are the period most dangerous for the embryo and life of the fetus, then the interests of social hygiene and public health imperatively require giving special care to precisely this period. Prophylactic medicine should without delay engage in the development of concrete measures for the protection of the human embryo at the early stages of development and submit proposals to the state institutions on the introduction of appropriate changes into the legislation on pregnancy protection" [1961b, p. 67].

P. G. Svetlov pays great attention to the substantiation and propagandization of these conclusions in a number of his other articles as well, published not only in the special press [1958c, 1961c], but in the broad medical press [1961a]. Problems of the human prenatal death rate and of measures of combatting it, ways to prevent various anomalies of development, etc. stand at the center of his attention. A number of works are devoted to the study of the pathogenic influence of ionizing radiation on the course of pregnancy and the development of the embryo [1958a, 1959h, 1960d].

To develop these practically important and very complex problems, P. G. Svetlov must include in the sphere of his investigations many problems of embryology, at first glance purely theoretical (for example, problems of the primary heterogeneity of the composition of vertebrate ...]

bodies, 1957b; of substitutions during the formation of embryo leaves, 1959c), as well as boundary regions between embryology and genetics [1953g, h, 1962]. Thus, he has revealed, together with G. F. Korsakova, that the quality of the feed received by the parent generation of fruit flies influences the development of signs of mutations in the daughter generation [1959]. It was found that the action of a brief increase in the temperature of the surrounding medium also leads to some change in the degree of expression of genotypic signs in the offspring [1962]. These and other investigations have shown that the appearance of pathological genetic indications in fruit flies can be normalized, or, on the other hand, intensified by changing the diet of the embryos, temperature conditions, amount of vitamin B<sub>12</sub>, and by adding antibiotics to the culture medium. It has also been found that there are specific substances in the bodies of larvae of normal flies, the addition of which to the feed of larvae of mutants normalizes the development of pathological genetic indications.

Considering the appearance of mutations as a result of harmful influences during the critical period of development of the gametes, P. G. Svetlov draws the important conclusion that pathological heredity is not fatal, that its manifestation in the given organism can be regulated by using external influences, especially during the critical periods of development.

Even this far from complete outline of the basic lines of the scientific work of P. G. Svetlov gives evidence of the breadth of his interests, of his strivings to penetrate into the most difficult, and yet theoretically and practically important fields of unknown phenomena. A master of experiment, a precise observer, and a profound original thinker, P. G. is always in the vanguard of the advance on the secrets of living nature. In any field that his inquisitive mind has touched, he can observe new facts, new principles, new, sometimes unexpected aspects of old problems. Beginning with the comprehensive morphological investigations of the development of invertebrate animals in the spirit of the best traditions of the classical Russian embryology of A. O. Kovalevskiy, I. I. Sechenko, and F. P. Ivanov, incorporating in his investigations many problems of the mechanics of development, including its main problem — the problem of determination, P. G. Svetlov has regularly arrived at a formulation and development of vitally important practical problems of medical embryology and at a development of the most difficult problems, bounding genetics, of the realization of genetic indications in ontogenesis. In all his work the morphological approach is organically combined with the eco-physiological approach, and his broad general biological erudition permits, where this is required, the enlistment of the data of any of the allied biological disciplines.

P. G. dedicates great effort and attention to the training of the rising scientific generation. At various times L. R. Shinkin, T. V. Chukarevskaya, A. I. Lyubitskaya, I. I. Savchenko, F. F. Mustazi, T. J. Stcherbatov, V. P. Levan, Ye. A. Pozhidayev, V. F. Puchkov, N. A. Barashchina, Ya. A. Val'shtrem, L. F. Isachenko, G. F. Korsakova, G. Ya. Azanova, L. G. Neverova, etc. have worked or are working under his

[ supervision. Many of them completed doctoral and candidate's dissertations under his supervision.

Pavel Grigor'yevich, as a researcher and supervisor, is characterized by great devotion to science, enthusiasm in his work, extremely high scientific principles, accuracy, and uprightness. Always ready to aid young scientists with his encyclopedic knowledge and experience, P. G. at the same time is impartial and strict in his scientific criticism. These qualities of his have played a great role in certain "critical periods" of the development of our science.

Let us wish the dear hero of the day -- the leading embryologist of our country, Pavel Grigor'yevich Svetlov -- long years of health and further fruitful work for the glory of Soviet science!

LIST OF SCIENTIFIC WORKS OF P. G. SVERLOV

1. On the Structure of the Tiedemann Bodies of Astroidea. Tr. ob-va estestvoispytatelei Pg. Un-ta (Works of the Society of Naturalists of Petersburg University), Vol. 45, 4, 1916, pp. 83-106.
2. On the Appendages of the Ambulacral Ring of Sea Urchins. Tiedemann Bodies of Echinoidea. Russk. zool. zhurn. (Russian Zoological Journal), 1921, pp. 262-282.
3. Early Stages of the Development of Blennius constrictus of the family Lumbricidae. Izv. Permsk. biol. NII (News of Perm Biological Scientific Research Institute), Vol. 1, No. 7, 8, 1923a, pp. 101-110.
4. On the Problem of Sexual Reproduction in the family Naididae. Russk. hidrobiol. zhurn. (Russian Hydrobiological Journal), Vol. 2, No. 8-10, 1923b, pp. 163-167.
5. Early Stages in the Development of Rhynchelmis limosella Hoffmst. Izv. Permsk. biol. NII, Vol. 2, No. 4, 1923c, pp. 141-152.
6. Observations of Oligochaeta of Perm'skaya Guberniya. I. Materials on the Fauna, Systematics, and Ecology of Rainworms. Izv. Permsk. biol. NII, Vol. 2, No. 6, 1924a, pp. 315-328.
7. Observations of Oligochaeta of Perm'skaya Guberniya. II. On the Fauna and Ecology of the Families Aeolosomatidae and Naididae. Izv. Permsk. biol. NII, Vol. 2, No. 5, 1924b, pp. 397-406.
8. On the Occurrence of Mesomyia strachii in Kame. Russk. hidrobiol. zhurn., Vol. 2, No. 8-10, 1924c, pp. 163-167.
9. Certain Data on the Fauna Oligochaeta of Cherdynskiy kray. Izv. Permskogo biol. NII, Vol. 3, No. 10, 1925, pp. 471-475.
10. On the Fauna Oligochaeta of Samarskaya Guberniya. Izv. Permsk. biol. NII, Vol. 4, No. 6, 1926a, pp. 246-256.
11. The Embryonic Development of the Family Naididae. Izv. Permskoi biol. NII, Vol. 4, No. 8, 1926b, pp. 359-372.
12. On the Fauna Oligochaeta of Perm'skaya Guberniya of the Families Tubificidae, Lumbriculidae, and Discodrilidae. Izv. Permsk. biol. NII, Vol. 4, No. 7, 1926c, pp. 343-346.
13. Osmoregulation and Osmotic Conditions of Development in Lumbriculidae. DAN SSSR (Reports of the Academy of Sciences USSR), 1926d, pp. 111-114.

14. Investigation of the Development of Rainworms. Tr. Osob. zool. lab. i sevastopol. biost. (Works of the Special Zoological Laboratory and Sevastopol' Biological Station), 1928a ser. 2, No. 13, pp. 95-329.

15. On the Problem of the Osmotic Pressure and Permeability of the Membranes of Trout Eggs. DAN SSSR, 1928b, pp. 504-508.

16. Entwicklungsphysiologische Beobachtungen an Forelleneiern. Roux Arch. f. Entw. mech., 1929, 14, 5/4, str. 771-785.

17. How Growth Takes Place in Worms. Priroda (Nature), 1931a, pp. 804-805.

18. Experiments on the Raising of Animals. Vestn. znaniya (Herald of Knowledge), 1931b, pp. 738-744.

19. Laboratory of Experimental Zoology and Morphology of Animals, LEZM. Vestn. AN SSSR (Herald of the Academy of Sciences USSR), 1931c, No. 10, pp. 51-54.

20. Über das Regenerationsvermögen des Schwanzes bei Amphibien während der Ontogenese. DAN SSSR, 1932a, No. 5, pp. 125-131.

21. What's New in the Field of the Study of Organisms. Priroda, 1933a, No. 5-6, pp. 122-123.

22. The Genetics and Physiology of Development. Priroda, 1933b, No. 5-6, pp. 124-133.

23. Experimental Zoology (Outline of Advances in the Last 15 Years). Sb. AN SSSR k 15-letiyu Okt. rev. (Symposium of the Academy of Sciences USSR on the 15th Anniversary of the October Revolution), Leningrad, 1932b.

24. The Development of Genetics. Priroda, 1933c, No. 3-4, pp. 152-160.

25. The Regeneration of the Tail and Tail Bud on Axolotl at Various Stages of Development. Tr. Lab. eksp. zool. i morf. AN SSSR (Works of the Laboratory of Experimental Zoology and Morphology Academy of Sciences USSR), Vol. 3, 1934a, pp. 163-225.

26. Differenzialbeschleunigung der Entwicklung der Brustflossen bei der Bachforellen unter Temperatureinwirkung. Biol. Zentralbl. 1934b, 54, 3/4, pp. 195-210 (In collaboration with A. I. Lyubitskaya).

27. Über die Regeneration während der Embryonalentwicklung. Roux Arch. f. Entw. mech., 1934c, Bd. 131, pp. 572-601.

26. Regeneration of regenerates in the tail of Axolotl. Tr. Lab.  
ekspl. zool. i morf. AN SSSR, Vol. 4, 1935a, pp. 29-56.

29. On the Problem of Organic Individuality (Regulatory Phenomena in Colonies of Cristatella). Bull. VIEM (Bulletin of the All-Union Institute of Experimental Medicine), No. 3, 1935b, pp. 3-5.

30. The Theory of Organizers and the Theory of Development. Priroda, 1935c, No. 1, pp. 46-58.

31. Regulationerscheinungen an Cristatella-kolonien. Zeitschr. f. Wissenschaftl. Zool., 1935d, Bd. 147, pp. 263-274.

32. Lamprodrius isoporus aus dem Ladoga- und Onega-Seen. Zool. Anziger, Bd. 113, Heft 7/8, 1936a, pp. 81-83.

33. Oligochaeta of the Kame Exhibition of 1935. Izv. Perm. obozr. Nauk, Vol. 10, No. 4, 1936b, pp. 149-150.

34. Experiments on the Local Action of Poisons on Different Parts of Amphibian Embryos. Bull. Biol. et Med. Exp., 1937a, v. IV, No. 5, pp. 449-451.

35. The Harmful Action of External Factors, as an Index of the Determination and Differentiation of the Tail Bud in Amphibia. Arkh. Anat. (Archives of Anatomy), Vol. 16, No. 2, 1937c, pp. 205-246.

36. On the Fauna Malacofauna of the Chubash and Tata Republics. Tr. Otdeleniya estestvoispr. Kazansk. un-ta (Works of the Society of Naturalists of Kazan' University), V. 55, No. 1-2, 1937d, pp. 17-202.

37. Soil Oligochaetous Worms - Oligochaeta Terricola. Zhivotnyi SSSR (The Animal World of the USSR), 1937, pp. 562-574.

38. Morphalactic Phenomena in the Regeneration of Rhipistes rubra Lattockiu (family Hydropsidae). Sb. v chast' 10-Jetiya N. V. Nasenova (Symposium in the Honor of the 60th Birthday of N. V. Nasenov), 1938, no. 651-666.

39. Ontogenesis of the Sex Differential of Sensitivity in Proscopia melanogaster. DAN SSSR, Vol. 51, No. 9, 1943a.

40. On the Different Hardiness to Cold and Harmful Factors of Males and Females of Proscopia melanogaster. DAN SSSR, Vol. 51, No. 8, 1943b, pp. 354-357.

41. On Sex Differences in the Sensitivity to Harmful Factors of the Imaginal Disks and Larvae of Drosophila melanogaster. DAN SSSR, Vol. 46, No. 1, 1945a (In Collaboration with O. V. Chekanovskaya).

42. In Memory of P. P. Ivanov. Priroda, 1945b, No. 1, pp. 94-95.

43. The Sensitivity of the Intestinal Epithelium in Males and Females of Drosophila melanoposter to the Injurious Action of Lactic Acid. DAN SSSR, Vol. 47, No. 1, 1945c.

44. On the Fauna Oligochaeta of Tomskaya oblast. Tr. Tomsk. Univ. (Works of Tomsk University), Vol. 41, 1945, pp. 10-11.

45. On the Nature of Differences in the Sensitivity to Harmful Factors in Males and Females. Experiments with the Imaginal Disks of the Caterpillar Dasychira sin. Izv. AN SSSR (Proceedings of the Academy of Sciences USSR), Vol. 2, 1949a, pp. 11-14. (In collaboration with O. V. Chekanovskaya).

46. Sex Differences in the Resistance to Injurious Influences in Cyclopida. DAN SSSR, Vol. 50, No. 6, 1949b, p. 1192-1193. (In collaboration with M. V. Ivanova).

47. Sex Differences in Resistance to the Action of Injurious Agents in Diocidous Plants. DAN SSSR, Vol. 51, No. 4, 1949c, p. 71-72. (In collaboration with E. G. Svetlova).

48. The Origin of Sex Differences in the Injuriousity of Biologically Flowering Plants. DAN SSSR, Vol. 50, No. 5, 1949d, p. 1095-1096. (In collaboration with E. G. Svetlova).

49. On the Procedure of Experiments on the Induction of Anoxia, Asphyxia and Certain Defects in Fetuses of White Rats. Sh. AMN SSSR po eksperimental'noi meditsine anomalii razvitiya (Symposium of the Academy of Medical Sciences USSR on Experimental Models of Anomalies of Development), 1950, (In collaboration with G. F. Korsakova).

50. Morphogenetic Reactions of the Fetus (Embryo and Placenta) to Overheating of the Mother's Organism. In the collection: Reflektornye reaktsii vo vzaimootnoshenii materinsko-gol'sodizma i ploda (Reflex Reactions in the Interrelationship of the Mother's Organism and the Fetus), Medgiz, 1954a, pp. 18-21. (In collaboration with G. F. Korsakova).

51. The Development of the Fetus After Overheating of the Body of the Mother Under Conditions of Denervation. In the collection: Reflektornye reaktsii vo vzaimootnoshenii materinsko-gol'sodizma, 1954b, pp. 18-21.

17. Izuchenie plooda, Mat' i det' po vremenii (Investigation with  
G. F. Korsakova)

18. The Process of Implantation of the Blastocyst in Rats. DAN SSSR,  
Vol. 13, No. 3, Lefka, p. 565-60 (In collaboration with G.  
F. Korsakova).

19. Embryology. Article in BSE 'Great Soviet Encyclopedia), 1956.

20. Articles on Evolutionary and Comparative Embryology Vestn. AMN  
SSSR (Herald of the Academy of Medical Sciences USSR), No. 1,  
1955c, pp. 92-93.

21. Peculiarities of the Early Period of Ontogenesis of Mammals in  
the Light of General Embryological and Medical Problematics  
In the collection: Problemy sovremennoy embriologii (Problems  
of Modern Embryology), 1957, pp. 249-256.

22. The Influence of Disruptions of the Innervation of the Uterus on  
the Course of Implantation in Rats. Byull. ekspr. biol. i med.  
(Bulletin of Experimental Biology and Medicine), No. 1, 1957a,  
pp. 78-82. (In collaboration with G. F. Korsakova).

23. On Primary Heteronomy of the Composition of the Vertebrate Body.  
(On the 15th Anniversary of the Death of P. P. Ivanov). Arkh.  
anat. (Archives of Anatomy), Vol. 34, No. 2, 1957b, pp. 3-22.

24. Die primare Heteronomie in Aufbau des Körpers der Wirbeltiere (Trans-  
lation of an Article From Arch. Anat.) Sowjet Wissenschaften.  
Naturwissenschaftliche Beiträge, 16 Dezember, 1957c, pp. 1271-  
1273.

25. Gigantic Rainworms (Allolobophora magnifica sp. n.) of Northwest-  
ern Altay. Zool. zhurn. AN SSSR (Zoological Journal of the  
Academy of Sciences USSR), Vol. 35, No. 2, 1957d, pp. 181-186.

26. Radiosensitivity of Embryos and the Paths of Formation of Radia-  
tion Embryopathies. Yezhegodnik IEM AMN SSSR (Yearbook of the  
Institute of Experimental Medicine, Academy of Medical Sciences  
USSR), 3, 1958a.

27. The Life and Works of P. P. Ivanov. Tr. In-ta istorii estestvoznaniya  
i tekhniki (Works of the Institute of History of Natural Science  
and Technology), Vol. 24, No. 5, 1958b, pp. 151-176.

28. Embryology and Medicine. Vestn. AMN SSSR, No. 11, 1958c.

63. The Embryo. Article in BME, Vol. 10, 1959a, pp. 662-677.

64. Embryonic Leaves. Article in the BME, Vol. 10, 1959b, pp. 677-684.

65. Substitutions in the Formations of Embryo Leaves. Tr. In-ta morf. zhiv. AN SSSR (Works of the Institute of Animal Morphology, Academy of Sciences USSR), No. 27, 1959c, pp. 26-40.

66. The Significance of Injury of Embryos in the Early Stages of Development in the Pathogenesis of Interuterine Diseases. In the collection: Patofiziologiya vnutriutrobnogo razvitiya ploda (Pathophysiology of the Internal Development of the Fetus), Medgiz, 1959d, pp. 114-129.

67. A Quantitative Consideration of Fetal Vacularization of the Placenta, As a Method of Determining Its Functional Effectiveness in Rats. In the collection: Patofiziologiya vnutriutrobnogo razvitiya ploda, Medgiz, 1959e, pp. 70-77. (In collaboration with G. F. Korsakova).

68. An Operative Method of Disrupting the Innervation of the Uterus in Rats. In the book: Patofiziologiya vnutriutrobnogo razvitiya ploda, Medgiz, 1959f, 86-95 (In collaboration with G. F. Korsakova).

69. On the Problem of the Dependence of the Manifestation of Hereditary Characteristics on the External Conditions During the Early Periods of Ontogenetic. Yezhegodnik IEM AMN SSSR, IV, 1959 g, pp. 471-480. (In collaboration with G. F. Korsakova).

70. Problems of Hereditary and Nonhereditary Disruptions of Ontogenesis Caused by the Action of Radiation. Vestn. AMN SSSR, No. 11, 1959h.

71. The Theory of Critical Periods of the Embryonic Development and the Problem of Congenital Diseases. Anat. Rec., 1960a, 136/2, p. 286.

72. The Theory of Critical Periods of Development and Its Significance For an Understanding of the Principles of Action of the Environment on Ontogenesis. Voprosy Tsitologii i obshchey fiziologi (Problems of Cytology and General Physiology), Academy of Sciences USSR, 1960b, pp. 263-285.

73. I. I. Sokolov. On His 75th Birthday. Tsitologiya (Cytology), 1960c, Vol. 2, No. 3, pp. 387-388.

74. The Influence of X-rays on the Course of Pregnancy and Development of the Fetus. Tr. soveshch. po mirn. ispol'zov. atomn. energii (Works on the Conference on the Peaceful Uses of Atomic Energy), Moscow, 1960d, pp. 227-232. (In collaboration with N. L. Garmashova).

5. The Pathogenic Action of Ionizing Radiation on the Embryogenesis of Rats. In the collection: Vlyenie ioniziruyushchego izcheniya na techenie beremenosti, sostoyanie ploda i novorozhdennogo. (The Influence of Ionizing Radiation on the Course of Pregnancy, State of the Fetus, and Newborn). Medgiz, 1960e, pp. 37-74 (In collaboration with G. F. Korsakova).

6. The State of the Higher Nervous Activity and Morphological Changes in Animals Irradiated During Embryogenesis. Yezhegodnik IEM AMN SSSR, V, 1960f, pp. 457-464. (In collaboration with T. P. Shlyafev and A. A. Manina).

7. The Morphology and Physiology of the Uterine Circulation. Translation from the English With Foreword and Afterword: Boyd. Morfologiya i fiziologiya matochnogo zriva i zheshcheniya (Boyd. The Morphology and Physiology of the Uterine Circulation). Medgiz, 1960g, pp. 1-75 (In collaboration with Ye. V. Chelikanskaya).

8. Review of the book: The Cell Biochemistry, Physiology, Morphology. Brachet and A. E. Mirsky. Tsitolgiya, 1965, Vol. 2, pp. 251-258 (In collaboration with M. S. Navashin, V. P. Paribok, Yu. I. Polyanskiy et al.).

9. Article in the Newspaper "Meditsinskiy rabotnik" (Medical Worker) No. 29, (1965). Tuesday April 11, Kiev.

10. An Embryological Substantiation of the Necessity of Protecting the Early Period of Human Uterine Life. Vestn. AMN SSSR, No. 11, 1961b, pp. 44-57.

11. The Significance of the Early Period of Uterine Life in the Pathogenesis of Disruptions of Normal Embryonic Development. Collection. Nauchnoye informatsionnoye byuro AMN SSSR (Scientific Information of the Academy of Medical Sciences USSR), 1961c.

12. Basic Results of the Works of the Laboratory of Embryology, Institute of Experimental Medicine, Academy of Medical Sciences USSR in the First Five Years of its Existence (1956-1960). Yezhegodnik IEM AMN SSSR, 1961d, pp. 115-312.

13. On the Morphology and Physiology of the Early Stages of Development of Teleosts according to the Data of the Moving Picture Film of Sh. S. Galustyan and V. D. Bystro. "The development of Nigrospilus fossile". Zhurn. zool., 1961, Vol. XLII, No. 1, pp. 22-37 (In collaboration with V. D. Bystrova and G. F. Korsakova).

14. The Action of a Transitory Increase in the Temperature of the Medium of "Forked" Mutants of Drosophila melanogaster on the Characteristics of Their Offspring. Dokl. AMN SSSR, Vol. 143, No. 4, 1962, pp. 961-964 (In collaboration with G. F. Korsakova).

## ON THE SEVENTY-FIFTH BIRTHDAY OF F. A. TSANDER

[Following is a translation of an article by Mechanical Engineer L. Korneev in the Russian language periodical Aviatsiya i Kosmonavtika (Aviation and Cosmonautics), Moscow, No 3, 1962, pp 26-31.]

The life of this richly gifted, modest, affable, and benevolent man is many-faceted and instructive.

Fridrikh Arturovich Tsander was born on 23 August 1887 in Riga into the family of a doctor of medicine. His father was a great lover of natural science, and at that time was working at the Zoological Museum. They lived in a house that had a large garden. The care of the garden was entrusted to the children. During the summer the boys frequently worked from morning to late evening. Thus the father developed a love of work and a love for natural science in them.

Tsander finished at the practical school in Riga as the first in his class. In his last class the teacher of cosmography acquainted the students with the article of K. E. Tsiolkovskiy, "Investigation of Cosmic Space with Jet-Propelled Devices." It produced a great impression on the young Tsander. Tsiolkovskiy's theoretical conclusions strengthened his dream of interplanetary flights.

To the end of his life, Fridrikh Arturovich loved and respected Tsiolkovskiy. The relations between these two scientists and patriots were always cordial and friendly.

At Tsiolkovskiy's request, Tsander later edited his selected works.

In 1907 Tsander entered the Mechanical Department of Riga Polytechnic Institute, and soon began to work on individual problems of cosmonautics. Not only interplanetary flights, but also many other phenomena of nature and technology occupied the inquisitive nature of the young student. The day no longer sufficed for him, and he frequently worked nights. Beginning with 7 February 1907 and up to the last days of his life, he wrote all his records and reports in shorthand.

In 1914, finishing with distinction at Riga Polytechnic Institute, he received the title of Technological Engineer. All Tsander's subsequent life and activity was entirely devoted to solving the problem of human interplanetary flight. His motto became the words "Flight to Mars!"

After finishing at the institute, Tsander entered the Provincial

Plant. In 1915 he was evacuated to Moscow together with the plant. In February 1919, he transferred to one of the Moscow aviation plants, in order to put into practice here his plans related to interplanetary flights.

At the end of 1920 Tsander delivered a report at the Inventors' Conference in Moscow on his plan of an interplanetary airship. He was heard by Vladimir Il'ich Lenin.

Tsander wrote in his autobiography of his encounter with Lenin with his own characteristic modesty, very briefly, seven words in all. However, this event made a lifelong impression on him. Here is what he told the author of these lines:

"After my report, I was introduced to V. I. Lenin. I was very embarrassed. But Vladimir Il'ich spoke about my work and plans for the future with such simplicity and sincerity that I even somewhat abused his time and spoke in very great detail about my works and about my dream that an interplanetary rocket ship would be constructed.

I told Lenin with very great enthusiasm that I am working not only on the construction of an interplanetary airship, but am thinking a great deal of how and under what conditions man will fly to Mars; how he will tolerate acceleration, how he will be dressed during flight, what and how he will eat, etc., etc.

Then Vladimir Il'ich asked me: "And you will be the first to fly?"

I answered that there would be no sense otherwise, since an example should be set, and after me others would dare to fly.

At the end of the conversation, Vladimir Il'ich shook my hand, wished me success in my work, and promised me support.

All night I could not sleep, being under the impression of my encounter with the leader of the proletariat, Vladimir Il'ich Lenin. I paced up and down my little room and thought about the greatness of this man. You know, our country is ravaged on account of the war, there is little bread, little coal, the plants are at a standstill, but this man, who is guiding this great government, finds the time to listen about interplanetary flights.

That means that my dream will be realized, I thought."

Inspired by his conversation with Lenin, Fridrikh Arturovich began to work with new enthusiasm on his plan of an interplanetary ship.

On 20 January 1924, Tsander addressed the theoretical section of Moscow Society of Lovers of Astronomy. This was his first extensive report, in which he broadly en compassed varied questions related to the solution of the problem of interplanetary flights. Striving to begin work more rapidly on the solution of individual technical problems, Tsander proposed the organization of a scientific research section. During this same year a group of enthusiasts of the Military Air Academy imeni Professor N. Ye. Zhukovskiy created the jet-engine section, which was subsequently converted to the Society for the Study of Interplanetary Communications; F. A. Tsander was a member of the presidium of the society, and F. E. Dzerzhinskii, K. E. Tolokonovskiy, and Ya. I. Perel'man were honorary members.

In 1924 in Moscow he received news that the American professor Goddard had supposedly sent a projectile to the moon. The Society for the Study of Interplanetary Communications answered him with a public debate. The debate was repeated twice.

At it Tsander told about his design of an interplanetary ship, of how he intended to raise it and its planned lowering, how safety of the flight would be guaranteed, and whether repeated startings of the jet engine would be possible. Later Tsander spoke of interplanetary stations, on which space ships from the earth can be received and sent further, about flights to Mars and Venus. At the end of the report, comparing his theoretical conclusions with the report that Goddard had sent a projectile to the moon, Fridrikh Arturovich demonstrated the absurdity of this news.

1927 -- the 10th anniversary of the Great October Socialist Revolution -- was approaching. This same year marked the 70th birthday of the father of rocket technology and the founder of the scientific theory of interplanetary voyages, K. E. Tsiolkovskiy. In connection with this, the group of enthusiasts of interplanetary flights organized the First International Exposition of Models of Interplanetary Apparatuses, which opened on 10 February 1927 in Moscow.

Invitations were sent out over the entire country to take part in the exposition and send exhibits. Fridrikh Arturovich also received his invitation with great satisfaction; he presented a model of his interplanetary ship. A F. A. Tsander booth was set up at the exposition.

During his entire life, Tsander indefatigably propagandized the idea of interplanetary flights. He strove to attract to their development as wide a circle of persons as possible, and gave reports in Moscow, Leningrad, Khar'kov, Saratov, Tula, Ryazan', and other cities.

From 1924 on he periodically had articles in print. In the journal Tekhnika i Zhizn' (Technology and Life) he published his article "Flights to Other Planets." In it the theory of the utilization of individual parts of an interplanetary rocket ship as fuel was substantiated in print for the first time.

A number of problems related to the realization of interplanetary flights were also elucidated for the first time; the idea of wings for an interplanetary ship was presented, and their advantage over a parachute for descending to the Earth or other planets having an atmosphere were substantiated. In a winged cosmic rocket, according to Tsander's idea, the engines should be combined. During flight in the atmosphere a piston or air-jet engine is turned on, while beyond the limits of the atmosphere the rocket engine operates. The article presents certain numerical data -- the results of calculations of Tsander himself. He also wrote an article under the title "Description of the Interplanetary Ship of the System of F. A. Tsander" and on 8 June 1924 sent it to the Committee on Matters Pertaining to Inventions as a Patent Claim. The article, somewhat abridged, was not published until 1937 in the collection "Rocket Technology."

In 1932 his book "The Problem of Flight with the Aid of Jet Apparatuses" appeared in print. In the preface Tsander wrote: "... this

book aims to popularize the idea of interplanetary communications. The author calls upon inventors in general, students, engineers, and astronomers to work in this field . . ."\*

We should mention that this is one of the first books in the world literature in which flight with the aid of rocket engines is discussed in great completeness, not only from the theoretical viewpoint, but also from the practical, engineering aspect.

Even before 1927, Tsander wrote a theoretical work "The Use of Metallic Fuel in Rocket Engines." It was published in 1936 in the first number of the collection "Rocket Technology."

Two articles of Tsander under the same title "Thermal Calculation of the Rocket Engine on Liquid Fuel" are of exceptional interest. They give for the first time in rocket technology, calculations of the temperatures of the walls of the combustion chambers and the necessary volumes of the chambers for complete combustion of the fuel components. The calculations presented in the article of rocket engines according to entropy diagrams, widely used at present, as well as the calculations of the heat transfer, showing the possibility of creating an entirely metallic rocket engine without using ceramics, are very valuable.

Fridrikh Arturovich was greatly concerned with aircraft engines as well. Thus, he proposed that a high-pressure piston engine, operating on liquid oxygen and petroleum according to a carburetorless scheme, where the components of the fuel are delivered to the cylinders by pumps, be used for the take-off of an interplanetary ship (in one of the variants).

At the same time Tsander worked out important problems of cosmonautics. Certain of them were discussed for the first time in the history of science, and to this time have not lost their significance. For example, in the articles "Theory of Interplanetary Voyages," Tsander spoke of the selection of the trajectories of interplanetary flights, to guarantee minimum consumptions of fuel, determined the periods of outward flight and the time of stay of the space ships on the way, problems of the correction of their trajectories to guarantee safe landing on the planet, etc. He calculated the trajectory of flight to Mars in especially great detail.

Tsander paid great attention to the problem of the return of the space ship to Earth. He calculated the flight of an interplanetary ship in the Earth's atmosphere, and proposed the idea of a planned landing with retardation by the atmosphere.

As early as 1930, Tsander showed that flight into cosmic space, followed by return to the Earth, requires the solution of many complex scientific and technical problems, one of which is the protection of the body of the ship from thermal influence during motion at great supersonic velocities in the dense layers of the atmosphere. He worked a great deal on this topic and wrote the article on the temperature that an interplan-

\* In 1947 the first edition of a collection of the works of F. A. Tsander, edited by M. K. Tikhonravov appeared, and in 1961 a second, more complete edition, edited by M. K. Korneyev was published. (Ed.)

17 and 18 September 1930, he made landings on the Berlin "Königsplatz" using the availability of electrical power supply with mercury "fuel cells" (mercury cells) which were widely used at that time (see below, on calculating neurons from the joint of the engine by means of electromechanical electricity).

Rander paid considerable attention to the development of his own original theme of the utilization of the force of light pressure for flights in the cosmos.

These works show that N. N. Randerovich can justifiably be considered one of the founders of a new branch of science - applied celestial mechanics, which studies the motion of interplanetary rockets in cosmic space.

Rander also tirelessly solved the practical problems of the design and testing of individual units of the rocket engine and the interplanetary ship he had planned.

In 1931 began his experiments with the first jet engine. Rander conducted more than 50 firings and many cold tests of this engine.

At the beginning of 1931, the section of jet engines was organized at the Central Council of the Society for the Promotion of Defense and Aerochemical Development. Rander was elected as its supervisor. In the second half of 1931 it was transferred into the Central Group in the Study of Jet Motion and the Liquid Method of Flight (Ges. JU). Rander became Chairman in the Executive Council of the group.

At the beginning of 1932, courses on jet-powered motion were organized at the TsGIRD. Fr. N. Randerovich drew up a detailed educational program for them. He himself enthusiastically delivered lectures and attracted eminent specialists: A. A. Vetchinkin, B. S. Steenkin, and others. A group of engineers of technology, full of initiative, emerged at the courses, and decided to begin the construction of rocket engines and rockets. The leaders of the Society for the Promotion of Defense and Aerochemical Development supported the enthusiasts, and in April 1933 a manufacturing group, under the name of GIRD (Group for the Study of Jet-Propelled Motions) emerged.

Fridrikh Arturovich was the spirit of the GIRD. In April 1933 he officially transferred to this group for work. The remaining enthusiasts mostly worked in the evenings and on their free days.

The GIRD members spent many sleepless nights in search of solutions of problems of rocket technology. One technical problem gave place to another. Frequently they were housed by railroads for weeks or even months.

In the following three years rocket engines burned up - the temperature within the combustion chamber reached 362°C, and in one year burnt out with what to cool them. Frequently the fuel supply system would burn up, and even the simplest parts did not operate under such conditions of temperatures of liquid oxygen. The insulation system did not withstand, and there was not enough of the needed metal and cutting instruments. There were no lathes. The measuring instruments were not available. The GIRD people had to design and construct their instruments.

In spite of the difficulties, this period was especially fruitful in the life of Tsander. After all, his dream was being realized in life. He had students, successors, whom he inspired with his ideas of the possibility of interplanetary flight. With love and great patience, Tsander explained complex problems in the field of rocket technology to his young listeners. In this respect he was inexhaustible. Possessing a rich memory, Fridrikh Arturovich derived practically all the formulas from memory.

By nature very modest, somewhat shy, Tsander was a cheerful person, who loved a joke, a laugh. When something went wrong in production or a test miscarried, he encouraged his associates with his favorite phrase: "But we'll still fly to Mars."

In attempting to create a high-power motor, Tsander had planned the OR-2 even before transferring to GIRD. This was the first liquid-fuel rocket engine, and it was designed for setup on the RP-1 glider, designed by B. I. Cheranovskiy. The OR-2 engine provided for regulation of the thrust by varying the amounts of the components of the fuel mixture delivered. Gasoline was taken as the fuel, and liquid oxygen as the oxidizing agent.

The collective of GIRD worked strenuously and selflessly. However, it seemed to everyone that things were going slowly. Everyone hoped as soon as possible to see the OR-2 engine set up on the glider and a "live" flying rocket.

The Party Bureau decided to announce an "assault" week. A staff of three persons was created (Tsander was one of them), and the plan of "assault" was worked out. A general conference, confirming this plan, was held, and the work was in full swing. Fridrikh Arturovich seemed to grow younger. He could be seen everywhere. He helped everyone, and the peal of his voice was a common sound.

It is recalled how for three days the necessary test could not be prepared. The members of Tsander's brigade, seeing how tired he was growing, presented him with an "ultimatum": "If he did not immediately go home and rest, everyone would stop work. But if he did go home and sleep, then everything would be prepared by the morning, and when he arrived the tests would begin." No matter how much Tsander protested, the brigade was implacable. They had to be obeyed. Inspired by the "victory 1," the brigade returned to work with new strength. Five -- six hours passed, and one of the mechanics loudly cried: "Everything is ready, raise the pressure! Give us Mars!"

And suddenly everything was set. The trestle-bed standing at the bottom of the room turned over with a roar. Out from behind it jumped Tsander, threw his arms around everyone, and then, laughing, said that he had found a place for himself behind the trestle-bed and had followed the work. But since it was boring to just sit there, he succeeded in completing a number of calculations, and thereby had a splendid rest.

This was our fiery enthusiast.

Fridrikh Arturovich took an active part in all the design and productive work, and frequently reported his ideas to his students. The confidence in his words and ideas was unlimited. The man was

exceptionally honorable and straightforward, never permitting a compromise with his conscience, winning the hearts of all who knew him close-  
ly.

The announced "assault" continued for two weeks. All the assigned tasks were fulfilled, and liquid-fuel engines were prepared. However, Tsander was not fated to see them in action: when the testing of the OR-2 began, he was under medical treatment at Kislavodsk.

Even before Tsander left, in January 1933, the GIRD brigade had begun the development of a liquid-fuel rocket, subsequently called the "GIRD-X." At first Tsander decided that the basic fuel would be a metal, and gasoline would be an auxiliary fuel. The metal was prepared in the form of powdered magnesium, delivered to the combustion chamber by injectors, as well as in the form of parts of the rocket construction, which should be melted in a boiler and supplied to the combustion chamber in the fused state.

The problem of the use of a metal as a fuel was then posed for the first time. Hence, performing the theoretical calculations and beginning the construction of the rocket, the brigade set about a parallel investigation of the problem of the supply and combustion of metallic fuel. A boiler for melting the metal, a counter-pressure chamber, a dust-precipitating cyclone, and an injector were designed and prepared. The OR-1 motor was used as a "laboratory."

Experiments showed that the use of metallic fuel is extremely complex, and in order to speed up the work on the design of the rocket, its second variant was developed. The units for combustion of the construction parts was withdrawn from the design. The metallic fuel remained only in the powdered form as part of the fuel. However, it was soon revealed that metallic powder cannot be delivered to the combustion chamber on account of its sintering into a solid mass. This required a substantial change and the second variant of the rocket. After that the third variant showed up well under flight tests.

The GIRD-X rocket weighed 174.5 kilograms (including fuel - 140 kilograms). Its length was 220 cm, diameter 14 cm, engine thrust 70 kg, useful load 2 kg, calculated height of flight 6.5 km.

However, Fridrikh Arturovich did not see his rocket in flight. His extreme overexhaustion affected his health. It took great efforts to persuade him to go for rest and treatment to Kislavodsk. On the way he was infected with typhus, and arrived at the sanatorium with a temperature.

His weakened organism could not cope with the disease, and on 23 February 1933 life was snatched away from Tsander.

The brigade continued to work on the rocket "GIRD-X," and on 25 November 1933 one of the first Soviet liquid-fuel rockets, prepared according to Tsander's idea, was successfully launched.

IVAN KARLOVICH VOLOZHINSKIY  
(On His 60th Birthday and 35th Year of Medical, Practical  
Scientific, and Social Activity!)

[Following is a translation of an article by I. S. Girets,  
in the Russian language periodical *Vestnik Rentgenologii*  
*i Radiologii* (Journal of Roentgenology and Radiology), Moscow,  
No. 4, 1962, pp. 71-76.]

In January 1962, the head of the course of medical roentgenology and radiology of Stavropol' State Medical Institute, Ivan Karlovich Volozhinsky, completed 60 years of life and 35 years of practical scientific and pedagogical activity.

I. K. Volozhinsky was born in 1901 into a peasant family. From 1922 to 1926 he studied at Leningrad University of Medical Knowledge. After finishing at the institute he worked as a district physician in Leningradskaya oblast.

He received his credentials as a physician-roentgenologist in 1929-1930 in Leningrad State Roentgenoradiological Institute.

From 1931 to 1939 he led the Roentgenological Department of the Hospital of Chelyabinsk Tractor Plant. In 1939, in a rural People's Commissariat of Soviet Russia, he was named chief roentgenologist of the Chelyabinsk oblast division of public health. He did much considerable work on the training of roentgenological staffs.

In 1944 I. K. Volozhinsky went to Stavropol' oblast army hospital as a post of Chief Roentgenologist of the kray division of Public Health and Head of the Roentgenological Department of the kray Clinical Hospital. From 1954 to 1960 he supervised a dozen course of roentgenologists at Stavropol' Medical Institute, where he also headed up a course of clinical roentgenology and radiology.

I. K. Volozhinsky has done great work on the expansion and improvement of the roentgenological network of the kray, and the training of roentgenological staffs; he has trained 163 roentgenologists and more than 100 laboratory technicians.

During the years of his activity, I. K. Volozhinsky has conducted 28 scientific research works, seven of which have been published.

For a long time I. K. Volozhinsky has been a member of the Board of Directors of the All-Russian Scientific Society of Roentgenologists, and so far has been continuous Chairman of the Far Eastern Scientific Society of Roentgenologists.

I. K. Volozhinskiy's activity has repeatedly been marked by awards; he has been awarded the Order of the Workers' Red Flag, the badge "Outstanding Public Health Worker," medals, and honorary certificates.

YEVGENIY YAKOVLEVICH VYRENKOV  
(On His 60th Birthday and 35th Year of Medical and  
Scientific Pedagogical Activity)

(Following is a translation of an article by Yu. N. Aniryushin in the Russian language periodical Arkhiv Anatomii, Gistologii i Embriologii (Archives of Anatomy, Histology, and Embryology), Leningrad, Vol 43, No 9, 1962, pp 121-123.)

In February 1962, Head of the Chair of Normal Anatomy of Ivanovo State Medical Institute, Doctor of Medical Sciences, Professor Yevgeniy Yakovlevich Vyrenkov completed 60 years of life and 35 years of medical and scientific pedagogical activity.

Ye. Ya. Vyrenkov was born on 19 February 1902 in the village of Novyye Gorki of Ivanovskaya oblast into the family of a factory worker. In 1924 he finished at the Medical Faculty of Moscow State University and was called into the ranks of the Red Army, where he served in the post of Senior Physician of the Cavalry-Artillery Division.

After demobilization, Ye. Ya. Vyrenkov worked from 1929 to 1930 as an intern, and then as hospital surgeon of the Surgical Department of the Second Ivanovskaya guberniya and Shuya District hospitals, where he conducted his first scientific works.

In 1933 Ye. Ya. Vyrenkov won the post of Assistant of the Chair of Normal Anatomy at Ivanovo Medical Institute, then transferred to the Chair of Topographical Anatomy and Operative Surgery, and in 1939 he served in the Chair of General Surgery.

In 1939 he defended the dissertation "The Anatomy of the Vaginae Synovialis of the Wrist" for the degree of Candidate of Medical Sciences.

In 1941 Ye. Ya. Vyrenkov was called to the ranks of the Soviet Army and named Senior Surgeon of the Local Clearing Post. During the Second World War he performed great work on the organization of surgical aid in hospitals and on increasing the surgical qualifications of young physicians.

In 1945 Ye. Ya. Vyrenkov was selected by the Scientific Council of Ivanovo State Medical Institute for the post of Docent of the Chair of General Surgery of Ivanovo Medical Institute, and in May 1946 he transferred to the post of Head of the Chair of Normal Anatomy of Ivanovo Medical Institute, which he is still heading.

Under his directorship, the facilities of the chair have been considerably expanded and re-equipped; an X-ray office has been

organized, systematic teaching of a course in radiogenoanatomy has been introduced, an operating room has been equipped, a vivarium and photolaboratory have been organized.

In 1950 Ye. Ya. Vyrenkov defended a dissertation for the degree of Doctor of Medical Sciences and was confirmed in the title of Professor.

Professor Ye. Ya. Vyrenkov has conducted about 60 scientific works, which are divided into two groups. The first group includes works on peacetime and wartime surgery. The second group contains works on the morphology of the lymphatic system. These include works on the connections of the lymphatic system with the organs of the abdominal cavity and pelvis, on the classification of regional lymph nodes from the viewpoint of embryogenesis, on the paths of metastatic spreading, on the principles of the distribution of regional lymph nodes of the internal organs, etc. In recent years Ye. Ya. Vyrenkov, together with his associates, has been studying the lymphatic system of the digestive organs during various pathological processes in man and under conditions of experiments on animals.

Under the direction of Professor Ye. Ya. Vyrenkov, the co-workers of the chair have completed more than 200 scientific works, including 10 candidate's dissertations on various problems of the lymphatic system.

The lectures of Professor Ye. Ya. Vyrenkov, written in a lively, easily understood form, are saturated with modern scientific material and are constantly illustrated by a large number of his own clinical observations; various problems of anatomy are elucidated from the practical aspect, and hence the lectures are illuminating and are eagerly attended by the students.

Professor Ye. Ya. Vyrenkov is a member of the Communist Party of the Soviet Union. For several years he has been First Chairman of the Ivanovskaya oblast Department of the Society of Anatomists, Histologists, and Embryologists, and he is currently Deputy Chairman of this society, and Supervisor of the Central Scientific Society of the Institute. Ye. Ya. Vyrenkov has long worked as Dean of the Medical Faculty, has been Deputy of the Shuya City and Leningradskiy Rayon Councils of Workers' Deputies of the city of Ivanovo.

The many years of medical, scientific pedagogical, and social activity of Professor Ye. Ya. Vyrenkov have been marked by six orders and medals of the Soviet Union. As a scientist, pedagog, and social worker, Yevgeniy Yakovlevich Vyrenkov has won high respect and authority in the scientific community.

Now Professor Ye. Ya. Vyrenkov is full of creative plans. His students and co-workers wish Yevgeniy Yakovlevich good health and strength for carrying out his intended plans.

LIST OF SCIENTIFIC WORKS OF DOCTOR  
OF MEDICAL SCIENCES, PROFESSOR Ye. Ya. VYRENKOV

1. The Vladimir-Mikulich Operation in Tuberculosis of the Calcaneal Bone. Severn. med. sb. (Northern Medical Symposia), 1928, 5-6, 567.
2. On the Problem of Rare Forms of Inguinal Hernia. Sevn. med. sb. 1928, 4-5.
3. Vomiting of Pregnant Women and Its Treatment. Gin. i akush (Gynecology and Obstetrics), 1933, 5.
4. Experiments in the Use of Potassium Bromide for Local Anesthesia. Sov. khir. (Modern Surgery), 1934, VII, 1.
5. A Case of Tetanus in the Postoperative Period. Sov. khir., 1934, VII, 4.
6. Periods of Development of the Upper Extremities. Sb. IGMI (Collections of Ivanovo State Medical Institute), 1935.
7. The Problem of Defects in the Development of the Upper Extremities. Sov. khir., 1936, 3.
8. The Problem of Pecckinghausen's Disease. Sov. vestn. dermatol. (Modern Herald of Dermatology), 1936, 6.
9. The Morphology of Double Monster. Sb. IGMI, 1940.
10. The Use of Thrombin to Stop Hemorrhage. Gosp. delo (Hospital Matters), 1944, 1-2.
11. Method of Local Combined Novocaine-Hexenal Anesthesia. Gosp. delo, 1944, 9.
12. The Psychological Picture of the Wound Exudate in Gunshot Osseomalitis. Gosp. delo, 1944, 12.
13. The Treatment of Infected wounds of the Soft Tissues With Sound Emulsion. Gosp. delo, 1945.
14. Contact of the Lymphatic System of the Testes and Prostate Gland. Sb. IGMI, 1949.
15. Paths of Outflux of Lymph From the Testes and Prostate Gland. Abstract of Doctoral Dissertation, 1949.

15. Relations of the Lymphatic System of the Urogenital Organs. Tr. V. Vses. s'ezda anat., hist., embr. (Thesis at the Fifth All-Union Conference of Anatomists, Histologists, and Embryologists), 1950.

17. On a Procedure of Anatomical Investigation (In collaboration with A. A. Duderova). Tr. V. Vses. s'ezda anat., hist., embr., 1951.

18. Contacts of the Lymphatic System of the Urogenital Organs. Tr. V. Vses. s'ezda anat., hist., embr., 1951.

19. Asymmetry of the Lymphatic System of the Ovary and Prostate Gland. Nauchn. konf. IGMI (Scientific Conference of Ivanovo State Medical Institute), 1951.

20. Discharging Lymphatic Vessels and Regional Nodes of the Prostate Gland. Sb. nauchn. tr. IGMI (Collection of Scientific Works of Ivanovo State Medical Institute), 1952, 8.

21. Connections of the Lymphatic System of the Digestive Organs in Man. Sb. nauchn. tr. IGMI, 1952, 9.

22. Connections of the Lymphatic System of the Internal Organs. Khirurgiya (Surgery), 1952.

23. Paths of Lymphogenous Metastasis. Zebil. st. IGMI (Anniversary Collection of Ivanovo State Medical Institute), 1955.

24. Lymphatic System of the Internal Organs and Its Connections. Sb. ref. nauchn. rabot, posvyashchennykh 25-letiyu kaf. normalnoi anatomii (Abstracts of Scientific Works Dedicated to the 25th Anniversary of the Chair of Normal Anatomy), Edited by Prof. V. V. Sitenkov, 1955.

25. On the Classification of the Lymph Nodes of the Abdominal Cavity and Pelvis. In the book: Liticheskaya sistema cheloveka i zhivotnykh. (Lymphatic System of the Internal Organs and its Connectors), Tver, 1955.

26. Connections of the Lymphatic System of the Internal Organs. Ibid.

27. Variants of the Lymphatic System of the Testes. Ibid.

28. On the Paths of Dissemination of the Lymphatic Cells. In collaboration with S. I. Raspail. Sb. nauchn. rabot IGMI (Collection of Abstracts of Scientific Works of Ivanovo State Medical Institute), 11, 1955.

29. The Significance of N. I. Pirogov in the Development of Surgical Anatomy. Sb. rabot Ivanovsk. obl. nauch. ob-sha (Collection of Works of Ivanovskaya oblast Surgical Society), 1958.

30. On the Paths of Lymphogenic Metastasis of Brown-Pearce Tumor From the Caecum of a Rabbit (In collaboration with G. A. Samoylov). Sb. nauchn. rabot IGMI, 12, 1957.

31. On the Paths of Lymphogenic Metastasis of the Brown-Pearce Tumor From the Testes of a Rabbit. Sb. nauchn. rabot IGMI, 13, 1957.

32. The Lymphatic System of the Digestive Organs and Its Clinical Significance. Tr. Ivanovsk. ob. nauchn. praktich. konf. po boleznyam pishchevareniya i pеченii (Works of Ivanovskaya oblast Scientific-Practical Conference on Digestive and Liver Diseases), Ivanovc, 1957.

33. The Lymphatic System of Certain Organs Under Conditions of Experiments on Animals. Tez. dokl. VI Vses. s'ezda anat., gistol. i embriol. (Thesis of Reports at the Sixth All-Union Conference of Anatomists, Histologists, and Embryologists), Kharkov, 1958.

34. On the Connections of the Lymphatic System of the Organs of the Abdominal Cavity and Pelvis (In collaboration with associates). Tez. Dokl. VI Vses. s'ezda anat., gistol. i embriol., Kharkov, 1958.

35. Certain Data on the Lymphatic System in the Normal and Pathological States. Tr. Yarosl. med. in-ta (Works of Yaroslavl' Medical Institute), May, 1958.

36. On the Principles of the Connectors of the Lymphatic System of the Organs (on Materials of the Works of the Chair). Nauchn. konf. Ivanovsk. med. in-ta (Scientific Conference of the Ivanovo Medical Institute), June, 1958.

37. The Lymphatic System of the Large Intestine of the Rabbit after Implantation of a Brown-Pearce Tumor Into Its Wall. Sb. nauchn. tr. IGMI, 18, 1958.

38. The Lymphatic System of the Rabbit Liver After Implantation of an Epithelial Brown-Pearce Tumor Into It. (In collaboration with G. A. Samoylov). Sb. nauchn. tr. IGMI, 12, 1959.

39. The Lymphatic System of the Gastrointestinal Tract and Metastases in Epithelial Brown-Pearce Tumor. Tez. nauchn. konf. po probleme fiziol. i patol. pishchevareniya, posvyashch. pamjati akad. K. M. Bykova (Works of the Scientific Conference on Problems of Physiology and Pathology of the Digestive Tracts, Dedicated to the memory of Academician K. M. Bykov), 1960.

40. Connections of the Lymphatic System of the Kidneys and Other Organs of the Abdominal Cavity and Pelvis. Sb. tr. IGMi, 23, 1961.

41. Connections of the Lymphatic System of the Heart and Thyroid Gland (in collaboration with Yu. N. Andryushkin). Sb. tr. IGMi, 1961.

42. The Scientific Work of the Chair of Normal Anatomy for Thirty Years. Sb. nauchn. tr. IGMi, 23, 1961.

43. The Lymphatic System of Certain Organs Under Conditions of Experiments on Animals. Tr. VI Vses. s'ezda anat., gistol. i embriol., 1961.

44. On the Connections of the lymphatic System of the Organs of the Abdominal Cavity and Pelvis (In collaboration with associates). Tr. VI Vses. s'ezda anat., gistol. i embriol., 1961.

45. Dynamics of the Changes in the Lymphatic System of Certain Organs of the Gastrointestinal Tract of the Rabbit After Implantation of an Epithelial Brown-Grace Tumor (In collaboration with N. A. Krotkova and G. A. Sarylov). Tez. dokl. konf. anat., gistol. i embriol. Vost. Sibiri (Thesis of Reports at the Conference of Anatomists, Histologists, and Embryologists of Eastern Siberia), Irkutsk, 1961.

BORIS GRIGOR'YEVICH YEGOROV  
(On His 70th Birthday)

[Following is a translation of an article in the Russian language periodical Zhurnal Neropatologii i Psichiatrii imeni S. S. Korsakova (Journal of Neuropathology and Psychiatry imeni S. S. Korsakov), Moscow, Vol 62, No 9, 1962, pp 1429-1430.]

In August 1962, the eminent Soviet neurosurgeon, Member of the Academy of Medical Sciences USSR, honored scientist, Professor Boris Grigor'yevich Yegorov, had his 70th birthday.

This birthday finds B. G. Yegorov in the prime of his outstanding talent as a clinical surgeon.

Boris Grigor'yevich has performed thousands of very complex operations on the central nervous system, and accumulated vast experience. His work is distinguished by unusual systematization, thoroughness, physiological substantiation of all the operative methods, and a careful attitude toward the brain tissue. Thousands of patients recall with gratitude the name of B. G. Yegorov, who saved their lives and returned them to health.

All B. G. Yegorov's activity is a bright example of the combination of the work of a clinical surgeon and a great researcher. There is perhaps no field of neurosurgery into which he would not introduce new and creative elements. A complex study of any problem, opening up the way to broad generalizations and a deepened understanding of the problem, is characteristic of all his activity, which has been reflected in more than 100 printed works on basic problems of the theory and practice of neurosurgery.

The most important and fruitful direction in the scientific works of B. G. Yegorov is the development of problems of neurooncology -- the method of surgical treatment of tumors of the hypophysis, posterior cranial fossa, arachnoidal endothelium of various localization, etc. He has devoted special investigations to the development of methods of reaching deeply situated tumors and removing tumors of the neuroectodermal type. B. G. Yegorov's investigations of the anatomo-physiological substantiation of rational operative techniques for reaching tumors of the frontal, temporal, parietal, and occipital lobes of the brain and tumors of the lateral and third ventricles are of very great significance for practical neurosurgery.

A number of the scientist's works have been devoted to the

surgical treatment of inflammatory diseases of the brain, in particular, abscesses and eptochial meningitis, as well as craniocerebral trauma.

For many years Boris Grigor'yevich has paid great attention to the problem of pain -- to the surgical treatment and pathogenesis of neuralgia of the trigeminal nerve, causalgia, and other pain syndromes. In recent years he has headed the study of problems of surgical treatment of vascular injuries of the brain.

The Institute of Neurosurgery under N. V. Burdenko of the Academy of Medical Sciences USSR, headed by B. G. Yegorov for the last 16 years, is the greatest neurosurgical institution in the world, and an outstanding scientific center. In recent years the clinical and scientific bases of the institute have been expanded, and a number of new departments and laboratories have been organized. A little fraction of these achievements has been due to the work, energy, and organizational talent of B. G. Yegorov.

B. G. Yegorov has paid very great attention to the training of staffs of neurosurgeons. Under his supervision, 28 candidate's and doctoral dissertations have been completed.

Boris Grigor'yevich combines his own clinical, scientific, pedagogical, and organizational work with great social activity. For many years he has been Editor-in-Chief of the journal Voprosy Nevrokhirurgii (Problems of Neurosurgery), and Chairman of the Board of Directors of the All-Union Scientific Society of Neurosurgeons.

In recognition of the scientific service of B. G. Yegorov, he has been elected Corresponding Member (1946) and then Member of the Academy of Medical Sciences USSR.

The government has a high opinion of the activity of B. G. Yegorov, and has rewarded him with the Order of Lenin, the Order of the Workers' Red Flag, the Order of the Red Star, the Order of the Sign of Honor, and medals.

Let us warmly congratulate Boris Grigor'yevich and wish him further successes in the responsible post of Director of Soviet Neurosurgery.

I. S. YELIGLASHVILI  
(On His 75th Birthday and 45th Year of Medical and Scientific Work)

[Following is a translation of an article in the Russian language periodical *Akusherstvo i Ginekologiya* (Obstetrics and Gynecology), No. 6, 1952, p. 121.]

Doctor of Medical Sciences, I. S. Yeliglashvili was born in 1877 in Georgia, studied at Dnar'kov Military Medical Academy, and then at the Medical Faculty of Khar'kov University. During the First World War I. S. Yeliglashvili was hospital physician of the Field Mobile Hospital, and from 1917 to 1931 he worked in the Ukraine in the system of the Peoples' Commissariat of Communications. Then he worked in the city of Poti, and from 1938 to the present he has worked in Sukhumi in Abkhazskaya ASSR. In Sukhumi I. S. Yeliglashvili has held the post of Head of the Gynecological Department of the First City Hospital, Head of the Maternity Hospital, Chief Obstetrician-Gynecologist of the City Public Health Division, and since 1951 -- Chief Obstetrician-Gynecologist of the Ministry of Health, Abkhazskaya ASRR.

In 1939 I. S. Yeliglashvili defended a Candidate's Dissertation on the topic "The Influence of Pharmacological Agents Used During Eclampsia on the Water Metabolism in Pregnant Women," and in 1946 he defended a Doctoral Dissertation in the topic "Data of a Comparative Study of the Physiology and Pathology of Labor in the Lower Monkeys." I. S. Yeliglashvili is also the author of 16 printed works on various problems of obstetrics and gynecology.

A highly qualified specialist, I. S. Yeliglashvili is doing great work on the training of staffs of obstetricians and gynecologists, with the Sukhumi Maternity Hospital as a base.

I. S. Yeliglashvili has the honorary title of Honored Physician of Abkhazskaya ASRR and Honored Scientist of Abkhazskaya ASRR. In spite of his advanced age, he is continuing to work with incomparable energy and enthusiasm, giving all his strength and knowledge, his rich experience to any task.

## ON THE 60TH BIRTHDAY OF YE. D. ZABLUDOVSKAYA

(Following is a translation of an article in the Russian language periodical Voprosy Kurortologii, Fizioterapii, i Lechebnoy Fizicheskoy Kul'tury (Problems of Spa Treatment, Physiotherapy, and Therapeutic Physical Culture), Moscow, No 5, 1962, p 469.)

The eminent Soviet physiotherapist and pediatrician, Candidate of Medical Sciences, Senior Scientist Ye. D. Zabludovskaya, has completed 60 years of life and 40 years of medical activity.

After completing highschool, Ye. D. Zabludovskaya entered a nursing course for the care of young children, and in 1921 began to work as a nurse in children's institutions of Moscow. Finishing at the Medical Faculty of I Moscow University in 1925, she entered the Institute of Maternity and Child Protection (now the Institute of Pediatrics, Academy of Medical Sciences USSR), where she worked for 27 consecutive years as a physician, graduate student, junior, and then senior scientist. Since 1952 Yelena Davydovna has worked as a physiotherapist and consultant in the children's institutions of Moscow.

The work of Ye. D. Zabludovskaya on the physioprophylaxis and physiotherapy of rickets is of great scientific and practical significance. Many years of research in this field have permitted her to propose a number of new physical means of treating this disease (the use of diathermy, paraffin in the treatment of rachitic myopathy, etc.), which have received recognition and been introduced into practice. Ye. D. Zabludovskaya's interesting investigations of light-sensitivity of the skin in children lay at the basis of the creation of phototherapeutic methods in pediatrics. Having been a student of G. N. Speranskiy -- an ardent propagandist of the idea of toughening up children, she has also worked a great deal in the field of physioprophylaxis.

Ye. D. Zabludovskaya's pen has given rise to 108 printed works, devoted to problems of physiotherapy and physioprophylaxis of children's diseases. We should especially mention the large number of popular scientific pamphlets that Zabludovskaya has authored.

Ye. D. Zabludovskaya is a member of the Communist Party of the Soviet Union, and engages in active social work. She has repeatedly been elected a member of the Board of Directors of the Moscow Society of Physiotherapists and Spa Therapists, and for more than 10 years has successfully directed the Children's Section of this society. Yelena Davydovna has been rewarded with the order "Sign of Honor" and the

badge "Outstanding Public Health Worker."

Ye. S. Zabluovskaya has met her 60th birthday full of energy and creative plans. Let us wish her good health, inexhaustible energy, and further creative successes in her fruitful activity.

Group of Friends

AVLIPPIY DAVIDOVICH ZURABASHVILI  
(On His 60th Birthday and 35th Year of Medical, Scientific,  
Pedagogical, and Social Activity)

(Following is a translation of an article by A. R. Narvashvili in the Russian language periodical *Arkhiv Anatomii, Gistologii i Embriologii* (Archives of Anatomy, Histology, and Embryology), Leningrad, Vol. 43, No 6, 1961, pp 125-130.

On 15 February 1960, the eminent Soviet psychiatrist and neurologist, honored scientist, Member of the Academy of Medical Sciences USSR, Academician of the Academy of Sciences Georgian SSR, Doctor of Medical Sciences, Professor Avlippy Davidovich Zurabashvili, completed 60 years of life and 35 years of scientific pedagogical, medical, and social activity.

As one of the greatest specialists in the field of clinical psychiatry, Academician A. D. Zurabashvili has won wide renown, both in our country, and abroad, as a result of his investigations in the field of the study of the fine structure of the brain in the normal and pathological states. He is the author of 140 scientific works, published in the Russian, Georgian, and German languages, including 12 monographs.

The creative interest of A. D. Zurabashvili encompasses a broad circle of varied urgent problems, such as: regional psychiatry; biology and psychiatric all; clinical psychiatry and problems of psychopathology; the neurodynamic basis of psychopathological manifestations; the pathophysiology of mental disorders and problems of nosological methods of the nervous disease; the morphology of the central nervous system (connections, architecture, fine structures).

Completing the Medical Faculty of Tbilisi State University in 1925, he remained, as a talented and promising specialist, at the Chair of Psychiatry for further scientific training in the field of psychoneurology. Being a very close student and associate of the well-known psychiatrist, Professor N. M. Asatiani, A. D. Zurabashvili engaged in numerous creative work in the field of the theory and practice of psychoneurology, and also organized the clinical and experimental laboratories in the Institute of Psychiatry of Georgia.

In 1931 A. D. Zurabashvili was sent to Leningrad, where for eight years he was trained by outstanding Soviet scientists, working simultaneously both in the field of clinical psychiatry (in the Military Medical Academy under G. M. Klyayr), and in the field of

[neuromorphology (in the laboratory of the Institute of the Brain imeni V. M. Bekhterev, the Institute of Physiology imeni I. P. Pavlov, and the All-Union Institute of Experimental Medicine).

A. D. Gurabashvili's first scientific work with respect to the connections of the central nervous system, on problems of the architectonics of the cortex and subcortical formations, and the fine structure of individual parts of the brain date from this period. He studied the connections of the cortex and central nuclei of the cerebellum with the formations of the medulla oblongata and the olfactory and parolfactory systems.

Studying the connections of the nucleus opticus with the frontal gyrus in man, A. D. Gurabashvili resolved the question of representation (afferent connections) of individual thalamic nuclei in the cortex of the large hemisphere.

In the work "On the Architectonics of the Brain and Spinal Cord of Cerebellum-less Dogs," he revealed that the most changes involve not a result of the disconnection of the anterior stem of the cerebellum, not only in the mesencephalon (red nucleus), but also in the representations of the thalamo-hypothalamic (centra nuclei of the thalamus opticus).

A. D. Gurabashvili was one of the first in the Soviet Union to begin a systematic study of the development of the cortex and subcortical centers in the ontogenesis of man.

In 1934 in the Institute of the Brain imeni V. M. Bekhterev he defended a Candidate's Dissertation, in which he advanced and substantiated in ontogenetic classification of the nuclei of the thalamus opticus of man and was the first to describe independent subnuclei in the medial sections of the thalamus. The isolation of new cytoarchitectonic formations in the thalamus opticus was of great significance in solving the problems of the fine architectonics of the reticular formation of the closest subcortical regions.

In 1937 in the Military Medical Institute, imeni S. N. Birov, A. D. Gurabashvili defended a Doctoral Dissertation, in which he worked out the principles of the morphological formation of the frontal region of the human cerebral cortex. These dissertations, rich in material data, creative generalizations, won A. D. Gurabashvili a diploma placing him as the founders of the ontogenetic direction in neuromorphology.

In 1938 A. D. Gurabashvili returned to Tbilisi at the invitation of the Peoples' Public Health Commissariat of Georgia SSR and the Tbilisi State Medical Institute, was named Director of the Institute imeni N. V. Andjiani, and was chosen head of the Chair of Neurology of Tbilisi State Medical Institute, simultaneously directing until 1950 the Division of Brain Morphology of the Institute of Physiology imeni Academician T. S. Mervishvili of the Academy of Sciences Georgian SSR.

In 1946 A. D. Gurabashvili was awarded the honorary title of People's Scientist of Georgian SSR; in 1946 he was elected a Corresponding Member of the Academy of Medical Sciences USSR, in 1953 a member of the Academy of Sciences Georgian SSR, and in 1960 Member of the Academy of Medical Sciences USSR.

Remarkable among his monographs is the "Morphology of the Human Brain."

of the structure of the neuron, primarily the dendrites and synaptic formations. A. D. Zurabashvili developed the foundations of the synapsocarchitectonic and pathosynapsocarchitectonic directions in neurology, he invented and substantiated new branches of general and particular synapsocarchitectonics, layer and area synapsocarchitectonics.

The rich and varied experimental material led A. D. Zurabashvili to the conclusion that the synaptic endings and dendrites are the most injurable (pathologically labile) formations, and at the same time, depending on the stage of the injury, the most rapidly restored formations of the central nervous system.

According to A. D. Zurabashvili's data, a definite sequence is detected in the injurability of the synapses, namely -- the axodendritic synaptic formations are more easily injured than the axo-axonic formations. The indicated phenomenon is definitely elucidated in the light of the evolutionary peculiarities of the nervous system.

A. D. Zurabashvili's data on the morphofunctional reversibility of injuries of the brain matter permitted him to make a new approach to the problem of structural prerequisites for protective inhibition. According to the author, reversible paraneurosis of the brain matter creates the morphological prerequisites for a protective inhibition in the cortex of the large hemispheres. Moreover, in spite of the contradictions of certain researchers, the structural bases of protective inhibition can by no means be sought in the specificity of cell charge (neurotransmitters, the accumulation of thyroid, etc.). There can be no morphological basis of inhibition in the form of a definite form of manifestation of cellular charges.

In 1965 A. D. Zurabashvili was rewarded for his outstanding investigations of synapsocarchitectonics and pathosynapsocarchitectonics with the prime Izeni I. R. Tarkhnishvili (Tarakhanov) of the Academy of Sciences Georgian SSR.

A. D. Zurabashvili's investigations of the pathophysiology of mental disorders, primarily, the pathocarchitectonics of schizophrenia, oligophrenia, autistic and manic psychoses, etc. enjoy wide renown.

A. D. Zurabashvili pays great attention in his creative researches to the experimental development of problems of the fine morphology of the brain during various injuries, especially in a study of the pathocarchitectonics of the brain during artificially induced convulsions, experimental traumas of the central nervous system, etc., etc.

The investigations of A. D. Zurabashvili (conducted jointly with B. I. Konevshvili) on the pathocarchitectonics of radiation injuries merit special interest and have received recognition as a definite contribution to modern radiobiology. On the basis of experimental morphological observations (conducted on dogs and monkeys using radioactive cobalt, fast neutrons, and X-rays), the authors were among the first to advance the hypothesis of radiosensitivity of the nervous tissue of the brain.

Academician A. D. Zurabashvili is currently directing a large collective of associates trained by him; more than 700 scientists from

[including 36 dissertations, have been conducted under his supervision.] 16 volumes of collections of the works of the Institute of Psychiatry of Georgia have been published under the editorship of Avilipav Davlatchishvili.

A brilliant pedagog and supervisor, academician A. D. Gurabashvili is always accessible not only to his direct associates and students, but also willingly shares his, indeed, encyclopedic knowledge with many specialists, who turn to the scientist for consultation.

His tireless creative activity, boundless drive and investigating energy, and high demands of himself are a constant inspiring example for his numerous associates and students.

A. D. Gurabashvili, a broadly educated scientist and highly cultured man, engages in considerable social activity. He was a member of Tbilisi City Council for the last four convocations, a member of the Scientific Council of the Ministry of Health of Georgia SSR, as well as a member of the scientific councils of six scientific organizations of the republic, a member of the Board of Directors of the All-Union Society of Neuropathologists and Psychiatrists, Chairman of the Board of Directors of the Republican Society of Neuropathologists and Psychiatrists, a member of the Editorial Council of *Zurnal nevropatologii i psichiatrii S. S. Korsakova* (Journal of Neuropathology and Psychiatry after S. S. Korsakov), a member of the Editorial Board of the Georgian journal *Savchita Meditare* (Soviet Medicine), a member of the Board of Directors of the Georgian Society for the Dissemination of Political and Scientific Knowledge, etc.

A. D. Gurabashvili's great merits in scientific, social, and pedagogical activity have been rewarded by high government rewards: the Order of Lenin, two medals, and the degree "Outstanding Public Doctor."

A. D. Gurabashvili writes at his 70th birthday in the prime of his creative forces. His associates and students, dear friends, warmly congratulating Dr. Avilipav Davlatchishvili on his 70th anniversary, wish him good health and long years of creative activity with all their hearts.

BASIC SCIENTIFIC WORKS ON MORPHOLOGY  
OF MEMBER OF THE ACADEMY OF MEDICAL SCIENCES U.S.S.R.,  
ACADEMICIAN OF THE ACADEMY OF SCIENCES GEORGIAN SSR,  
A. V. ZURABASHVILI

1. On the Problem of the Physical Constitution of the Population of Georgia (in Kakhetiya). Tbilisi Tanmedrove med. (Tbilisi "Tanamedrove" of Medicine), 1929, 3, 311-320.
2. A Rare Case of Anesthesia of the Cerebellum. Sb. tr. In-ta im V. M. Bekhtereva (Collection of Works of the Institute Imeni V. M. Bekhterev), Leningrad, 1935, 1, 143-150.
3. Ein seltener Fall von Agenesie des Kleinhirnwurmes. Arch. Psych. u Nervenr., 1935, 95, 718-728.
4. Histological Changes in an Early Case of Schizophrenia. Arkh. biol. nauk, posvyashch. skad. I. P. Pavlovu (Archives of Biological Sciences, Dedicated to Academician I. P. Pavlov), 1934, 36, Series "б", 1, 287-305.
5. Histopathologische Veränderungen bei Schizophrenie. Mtschr. Psych., 1933, 87, 52-63.
6. Family Peculiarities of the Measures, Convolutions in Schizophrenia. Sb. tr. In-ta im V. M. Bekhtereva, Leningrad, 1935, 2, 175-182.
7. On the Problem of the Ontogenesis of the Thalamus Opticus of Man (Classification of Nuclei). Zhurn. nevropat. i psich. (Journal of Neuropathology and Psychiatry), 1934, 3, (1-12, 27-44).
8. Pathoarchitectonic Changes in Experimental Epilepsy. Zhurn. nevropat. i psich., 1935, 4, 9-10, 77-94.
9. Zur Pathoarchitektonik der Epilepsie. Mtschr. Psych. o. Neurol., 1935, 90, 220-240.
10. On the Ontogenesis of the Cortical Fields of the Human Upper Frontal Convolution. Sb. tr. labor. arkhitektoniki mosga VIEM (Collection of Works of the Laboratory of Architectonics of the Brain, All-Union Institute of Experimental Medicine), Leningrad, 1936, 99-136.
11. Pathoarchitectonics of Syphilitic Diseases of the Central Nervous System. Sov. nevropsich (Modern Neuropsychiatry), Leningrad, 1939, 3, 439-454.

12. On the Problem of Acute Changes of the Ganglionic Cells. Zhurn. neiropt. i psichiatr., 1931, v. 1, 209-214.

13. On the Problem of the Connections of the Thalamus Opticus With the Frontal Convolutions. Sov. psikh., Leningrad, 1930, 2, 31-36.

14. On the Architectonics of the Brain and Spinal Cord of Teleost Fishes Dogs. Tr. fiziol. in-ta im. I. P. Pavlova (work of the Physiological Institute imeni I. P. Pavlova), 1939, v. 11-12.

15. Certain Problems of the Ontogenetic Development of the Nervous System in Connection with the Functional Maturation of the Latter. Tr. fiziol. in-ta im. I. P. Pavlova (works of Tbilisi State Institute), 1936, 2, 137-139.

16. Certain Features of the Embryonic Development of the Nervous System of the Bird. Tr. In-ta fiziol. AN Gruz. SSR (works of the Institute of Physiology, Academy of Sciences Georgia (SSR), Tbilisi, 1941, 4, 101-115).

17. Newer Data on the Fine Structure of the Large Hemispheres in the Light of Their Functional Significance. Tr. fiziol. in-ta AN Gruz. SSR, Tbilisi, 1940, 1, 150-164.

18. The Fine Structure of the Spinal Cord of Animals. Tr. In-ta fiziol. AN Gruz. SSR, Tbilisi, 1940, 97-101.

19. The Pathomorphology of Schizophrenia. Tr. In-ta psich. AN Gruz. (works of the Psychiatric Institute of Georgia), 1940.

20. The Pathomorphology of Idiocy. Ibid.

21. Certain Problems of Recent Ontogeny of the Human Brain. Ibid.

22. The Fine Structure of the Cerebral Cord of the Bird in Embryonic Development. Tr. In-ta fiziol. AN Gruz. SSR, 1942, 1, 101-111.

23. The Morphology of the Sines of the Birds' Cord. Tr. In-ta fiziol. AN Gruz. SSR, 1942, 1, 101-112.

24. The Morphology of the Synaptic Apparatus of the Spinal Cord. Tr. In-ta fiziol. AN Gruz. SSR, 1942, 2, 113-121.

25. The Problem of the Reversibility of the Ganglionic Diseases of the Central Nervous System. Zhurn. AN Gruz. SSR (works of the Academy of Sciences Georgia (SSR)), 1945, v. 1, 101-107.

26. Pathomorphological Changes of the Central Nervous System at Death, Caused by an Air Shock Wave. Tez. AN Gruz. SSR, 15-ya sessiya 1945 g. (Thesis of the Academy of Sciences Georgian SSR, 15th Session, 1945). For more details see the Tsudakh In-ta fiziol. an Gruz. SSR (Works of the Institute of Physiology, Academy of Sciences Georgian SSR), 1945, 6, 191-208.

27. On the Embryonic Development of the Branches of Nerve Cells of the Bird Spinal Cord. Tr. In-ta fiziol. AN GSSR, 1945, 4, 359-360.

28. Certain Problems of the Pathomorphology of the Central Nervous System in Psychoses. Tr. In-ta psikh. Gruzii, 1945, 2.

29. On the Problem of the Pathomorphology of Senile Psychoses. Tr. In-ta psikh. Gruzii, 1945, 2.

30. Ob. embrionalnym razvitiem kory bol'shikh polusharit cheloveka i nekotorye srovnitel'no-anatomicheskie dannye. (The Embryonic Development of the Cortex of the Large Hemispheres of Man and Certain Comparative Anatomical Data). Tbilisi, Georgian Publishing House of Medical Literature, 1946.

31. The Modern Significance of Synapsiology. Tez. 1-iy nauchn sessii otdel. biol. i med. nauk Ak. Gruz. SSR v Tbilisi, 31/V, 1946 (Thesis of the First Scientific Session of the Department of Biological and Medical Sciences, Academy of Sciences Georgian SSR in Tbilisi, 31 May, 1946).

32. The Problem of Pathophysiology and Pathophysiology in Psychiatry. Vest. AMN SSSR (Herald of the Academy of Medical Sciences USSR), 1948, 1, 51.

33. On the Problem of the Morphological and Functional Reversibility of the Nerve Elements of the Cerebral Cortex of the Cat. Tr. In-ta fiziol. Ak. Gruz. SSR, Tbilisi, 1948, 7, 365-380.

34. Sinapsy (Synapses). Monograph. Tbilisi, Georgia Publishing House of Medical Literature, 1947.

35. The Newest Data on the Fine Structure of the Cerebral Cortex. Tr. Tsentr. in-ta psikh., posvyashchen T. A. Geyeru (Works of the Central Institute of Psychiatry, Dedicated to T. A. Geyer), Moscow, 1941, 62, 430-436.

36. Sinapsy i obratimye izmeneniya nervnykh kletok (Synapses and Reversible Changes of the Nerve Cells). Monograph. Publishing House of the Academy of Medical Sciences USSR, Moscow, 1941.

37. On the Problem of the Laminar Synapsarchitectonics. Subsymposium  
AN Gruz. SSSR, 1945, 10, 6, 11-16.

38. On the Synaptic Connections of the Cortex of the Large Hemispheres.  
Zurnal v. n. d. im. I. P. Pavlova (Journal of  
 Ameri I. P. Pavlova), 1951, 1.

39. On the Synapsarchitectonics and Restorability of the Nerve Cells.  
Yubil. st. Tbilissk. med. in-ta, posvashen. 30-letiyu  
Sovetskoy vlasti v Gruzii (Anniversary Symposium of Tbilisi  
 Medical Institute, Dedicated to the 30th Anniversary of Soviet  
 Power In Georgia), 1951.

40. Review of the book of I. Ye. Snesarev "Theoretical Foundations of  
 Pathological Anatomy of Psychiatric Diseases". Zhurnal nevropatologii i  
psichiki., 1951, 1.

41. On the Reversibility of Nerve Cells. Tr. Tbilissk. gos. med. in-ta  
 (Works of Tbilisi State Medical Institute), 1954, VIII, 161-182.

42. O topkoy morfologii golemogo mozga krov' (On the Fine Morphology of  
 the Cerebral Cortex). Georgian Publishing House of Medical Literature,  
 Tbilisi, 1955.

43. On the Dynamic Significance of the Various Pathological Changes  
 at the Brain Matter. Tr. dokl. Akademii nauchno-tekhnicheskikh  
issled. ANN SSSR, akad. sovet in-ta patol. fiziol. ANN SSSR  
 Tbilissk. gos. med. in-ta) Thesis ("Reports of the Combined  
 Session of the Bureau of the Medical Biology Department, Academ. of  
 Medical Sciences USSR, Scientific Council of the Institute of  
 Pathological Physiology, Academy of Medical Sciences  
 USSR, and Tbilisi State Medical Institute"), 1955, 1.

44. On the Basic Processes of Integration of the Tel. Viss. nach  
 konf., posvyashch. 10 letiyu so dnya rozhdeniya S. S. Korolevova  
 i sotsial'nym opredeleniem zhizni (Dedicated to the 10th Anniversary of the  
 Scientific Council and of the Social Status of the Life  
 of S. S. Korolev and of the Problems of Psychiatry).  
 Moscow, Nedra, 1955, 1945.

45. N. Ye. Uvedenskiy's Theory of Psychosis and Problems of Reversible  
 Changes in the Nerve Formation. Tr. dokl. nauchno-tekhnicheskikh  
issled. posvyashch. posesiam ochenivya N. Ye. Uvedenskogo, 1955-1956  
 Odessa, psichoneurologi. inst. (Thesis in Reports of the Scientific  
 Session Dedicated to Problems of N. Ye. Uvedenskiy's Theory  
 of May-June 1955 at Odessa Psychoneurological Institute),  
 1955, 31.

46. Materialy po patoarchitektonike uchevogo porazeniya (Materials on the Pathoarchitectonics of Radiation Sickness). Georgia Publishing House of Medical Literature, Tbilisi, 1958 (in collaboration with A. R. Nanyashvili).

47. The Dynamic Significance of Reversible Pathomorphological Changes of the Brain Matter. In: In-ta eksp. morfol. AN Gruz. SSR (Works of the Institute of Experimental Morphology, Academy of Sciences Georgian SSR), Tbilisi, 1957, VI, 19-21.

48. Radiation Sickness and the Pathoarchitectonics of the Brain. In: Nauchn.-issl. in-ta psikh. im. Asatiani (Works of the Scientific Research Institute of Psychiatry (named Asatiani)), 1957, IV, Medgiz, Tbilisi.

49. The Influence of Radiation Trauma on the Organization in Connection with Latent Trauma of the Skull. Vestn. AN Gruz. SSR (Newsletter of the Academy of Sciences Georgian SSR), 1958, XX, 4.

50. Certain Problems of Synapsoarchitectonics. Sb. tr. In-ta psikh. Tbilisi (Collection of Works of the Psychiatric Institute of Tbilisi), 1958, VIII.

51. Sinapsy i obratimye izmeneniya nervnykh kletok. (Synapses and Reversible Changes of the Nerve Cells). Monograph, Second Edition, Publishing House of the Academy of Sciences Georgian SSR, 1958.

52. Certain Problems of the Theory of Peculiar Formation in Connection With the Theory and Practice of Psychiatry. Zhurn. nevropatol. i psich. im. S. S. Korsakova (Journal of Neuropathology and Psychiatry named S. S. Korsakov), 1950, 6, 532-540.

53. Ocherki po tonkoy morfologii tsentral'noy nervnoy sistemy (Outline of the Fine Morphology of the Central Nervous System). Monograph, Publishing House of the Academy of Sciences Georgian SSR, 1958.

54. Problems of Trauma. In the book: Problema traumy, Tl. XI sessii obshch. soabr. AMN SSSR (The Problem of Trauma, Works of the Eleventh Session, General Collection of the Academy of Medical Sciences USSR), Moscow, Medgiz, 1958, 30-31.

55. The Reactivity of the Dendrite Branches and Synaptic Processes of the Cortex of the Large Hemispheres. In the book: Strukturnaya funktsiya nervnoy sistemy Tz. dokl. sezdunar. konf. (The Structure and Function of the Nervous System. Thesis of Report at the International Conference) (In collaboration with R. Z. Nanyashvili). Moscow, Medgiz, 1958.

30. On the Pathomorphology of the Cerebral Cortex in Schizophrenia in the Light of the Newer Data. Zhurn. nevropatol. i psich., im. S. S. Korsakova, Vol. 31, No. 1, 1241-1245.

31. On the Fine Pathomorphology of the Monkey Brain During Radiation Sickness. Mater. konf. po fiz., patol. i obez'yan (Materials of the Conference on the Biology and Pathology of Monkeys) (in collaboration with B. R. Nameyshvili), Tbilisi, 1968.

32. Problems of the Structural Pre-reqsities for Reactivity of the Cortical Apparatus and the Newer Concepts of the Reticular Formation. Tra. In-ta psich., im. N. Asatiani, Tbilisi, 1968.

END

27/2/2022  
2022  
2022